

**Reef Environmental Education Foundation (REEF) Monitoring of the
Artificial Reef *Gen. Hoyt S Vandenberg*
Final Project Report Dec 2015**

**Submitted to Florida Fish and Wildlife Conservation Commission Artificial Reef Program
In Fulfilment of FWC Grant # 13249, Annual Vandenberg Monitoring 2014-2015**

Background

The *General Hoyt S. Vandenberg* is a 523' steel hulled missile tracking ship that was intentionally sunk seven miles off Key West, Florida, on May 27, 2009, to serve as a recreational diving and fishing artificial reef. The ship lies in 140' of water; at its broadest point the deck is 71' wide, creating habitat from a depth of 45' to the sandy bottom. The *Vandenberg* is the largest artificial reef in the Florida Keys National Marine Sanctuary and the second largest in the world. The City of Key West, the Artificial Reefs of the Keys (ARK), Florida Fish and Wildlife Conservation Commission (FWC), US Department of Transportation Maritime Administration (MARAD), and the Florida Keys National Marine Sanctuary (FKNMS) worked closely to obtain, clean, scuttle and sink the vessel, as well as raise funds for the effort.

Prior to the sinking, Reef Environmental Education Foundation (REEF) was contracted by the FWC to conduct an initial study with pre- and post-deployment monitoring of the fish assemblages associated with the *Vandenberg* and adjacent reef areas. Reports that summarize the cumulative survey effort of the survey events between 2009 and 2012 are available on the REEF website (www.REEF.org/programs/monitoring#vandenberg). A follow up study was contracted by FWC for 2014 and 2015. This report summarizes the results.

REEF is an international non-profit marine conservation organization that conducts research designed to educate and engage local communities in conservation-focused citizen science. REEF is based in Key Largo, Florida, with West Coast offices in California and Washington. The mission of REEF is to conserve marine ecosystems for their recreational, commercial, and intrinsic value by educating, enlisting, and enabling SCUBA divers and other marine enthusiasts to become active stewards and citizen scientists. REEF links the diving community with scientists, resource managers, and conservationists through marine-life data collection and related activities. REEF coordinates the Volunteer Survey Project, which has trained and involved over 14,000 divers and snorkelers in marine life identification and the collection of population and distribution data. This citizen science program has generated one of the largest marine life databases in the world, with over 200,000 surveys conducted to date. REEF's active surveyors achieve one of four ratings of expertise and the most accomplished of these ratings (Levels 4/5) are considered Experts. Active members holding Expert surveyor status make up our Advanced Assessment Team (AAT) and take part in high level assessments for the State of Florida, National Park Service, NOAA, and other international organizations. REEF AAT members who contributed data during the 2014-2015 Vandenberg surveys were: Lad Akins, Ellie Splain, Keri Kenning, Allison Estape, Carlos Estape, Ben Barker, Stacey Frank, Jonathon Lavan, Stephen Vinitsky, Lillian Kenney, Dave Grenda, Ed Martin, Elizabeth Underwood, Katie Rowe, and Joe Thomas.

Monitoring Objectives

The REEF *Vandenberg* monitoring objectives for this grant project are: To descriptively and comparatively quantify the fish assemblages over time at the *Vandenberg* and nearby artificial and natural reefs as a method to document changes as a result of increased habitat provided by the sinking of the *Vandenberg*. Additionally, efforts to document the occurrence of any non-native marine species including Lionfish, (*Pterois volitans*), orange cup coral (*Tubastraea coccinea*), and titan acorn barnacles (*Megabalanus coccopoma*) were included to facilitate early detection and possible removal efforts with the FKNMS.

Methods and Survey Effort

In July of 2014 and 2015, teams of 8-11 expert REEF divers conducted fish monitoring surveys at each of the 8 project study sites (Table 1).

Table 1. Project study sites.

REEF SITE NAME	REEF CODE	DEPTH	TYPE	COORDINATES
Gen. Hoyt S Vandenberg	34080097	40'-100'	Artificial	24° 27.60' N / 81° 44.25' W
Joe's Tug	34080010	40'-65'	Artificial / Natural	24° 27.83' N / 81° 44.24' W
Marker 32 Deep	34080095	50'-75'	Natural	24° 28.25' N / 81° 44.72' W
Marker 32 Shallow (Topino Buoy)	34080023	15'-30'	Natural	24° 28.34' N / 81° 44.73' W
Western Sambo Deep*	34080094	50'-75'	Natural	24° 28.66' N / 81° 42.93' W
Western Sambo Shallow*	34080047	15'-30'	Natural	24° 28.75' N / 81° 42.98' W
Eastern Dry Rocks Deep	34080096	50'-75'	Natural	24° 27.45' N / 81° 50.44' W
Eastern Dry Rocks Shallow	34080008	15'-30'	Natural	24° 27.52' N / 81° 50.67' W

*Sites are located within Western Sambo Ecological Reserve No-Take Zone. Also recorded as REEF Code 34080001.

The monitoring project employs two survey methods to quantify fish assemblages; roving diver technique surveys (RDT; Schmitt & Sullivan 1996) and stationery visual counts (SV; Bohnsack and Bannerot, 1986). A team of REEF staff and AAT members conducted RDT surveys at the *Vandenberg* and 7 nearby natural and artificial reefs; SV surveys were conducted at the *Vandenberg* and one nearby artificial reef (Joe's Tug).

The RDT is a visual survey method specifically designed to generate a comprehensive species list and sighting frequency and relative abundance estimates. During RDT surveys, divers swim freely throughout a dive site and record every observed fish species. During each survey, divers assign each recorded species one of four log10 abundance categories [single (1); few (2-10), many (11-100), and abundant (>100)]. The RDT survey methodology is employed by the REEF Volunteer Fish Survey Project, and all survey data are archived in the REEF Marine Life Sightings Database (www.REEF.org). Following each survey dive, the surveyor enters their species data along with survey time, depth (from dive computers), temperature (from dive computers), and other environmental information, including habitat type, current, and visibility (estimated) into the REEF database via on-line data entry. During entry and prior to final uploading, data undergo QC/QA checks including automated and human reviews. Once uploaded into the REEF database, summary data can be accessed by the public

on the Internet at REEF's homepage (<http://www.REEF.org>) by geographic location. In addition to a species list, the following metrics can be calculated from survey data for each site:

- 1) **Sighting Frequency (%SF)** = number of surveys reporting species of interest / total number of surveys at that site
- 2) **Density Score (DEN)**= $[(nSx1)+(nFx2)+(nMx3)+(nAx4)] / (nS + nF + nM + nA)$ Where n is the number of times each abundance category was assigned and s=single, f=few, m=many and a=abundant (the four categories of abundance recorded during RDT surveys).
- 3) **Abundance Score (ABS)** = %SF * DEN By multiplying the sighting frequency with the density score a weighted measure of abundance can be derived.

The RDT method does not include size estimates. Documenting changes in size structure is not possible from this dataset. Stationary Visual Count surveys were conducted at the *Vandenberg* and one other artificial/natural site (Joe's Tug) to document estimated sizes of fish over time along with a more precise measure of density for conspicuous, non-cryptic species. During SV surveys the diver is stationery in the center of a cylindrical area with a radius of 7.5m, recording all species present in the cylinder for a period of 5 minutes. Following the 5 minute list compilation, an abundance count and the corresponding minimum, maximum, and mean sizes are recorded for each species present in the cylinder area. Additional information on time of day, depth, current, and visibility are recorded. All SV surveys are conducted on the same day, towards the end of the week-long monitoring effort. Surveyors are given PVC measuring sticks to aid with size estimation. Prior to the SV surveys, REEF surveyors practiced estimating fish length to the nearest centimeter.

A total of 191 RDT surveys were conducted during this project (105 in 2014 and 86 in 2015) along with 34 SV surveys (16 in 2014 and 18 in 2015). Eighty-six RDT surveys were conducted by REEF experts in 2014 and 66 in 2015 and are included in the analysis for this report. All SV surveys were conducted on *Vandenberg* and Joe's Tug by experts. Table 2 summarizes the survey effort and dates for the project.

Currents were rarely present at any of the reference sites, and visibility was generally good. Surveys conducted on the reference sites were similar in nature to those conducted on the *Vandenberg*, with deeper sites limited to 30 minutes of survey time and shallower sites standardized to 60 minutes.

Site Descriptions

The *Vandenberg* is an intact steel-hulled ship located upright on a level sand bottom at a depth of approximately 140'. Vertical relief of the ship is as much as 100' near the superstructure, which reaches a depth of approximately 40'. Numerous mooring buoys are present on the ship, providing access to both commercial and recreational fishing and diving. Currents and visibility on the site vary widely depending on wind and other environmental factors, through generally, visibility is greater than 30' and currents are less than 1kt. The main deck on the bow of the ship lays at about 100' and most of the complexity in the ship is at depths shallower than this. Open doorways allow marine life to move in and out of the interior spaces, though divers are not encouraged to utilize this space. Surveys on the *Vandenberg* during this project were conducted only on the outside of the wreck and

at depths shallower than 100'. Divers typically spread out in buddy teams and surveyed from bow to near the stern during each survey event, keeping bottom times within no decompression limits and survey time no greater than 30 minutes.

In addition to the *Vandenberg*, seven reference sites were selected in consultation with FWC staff and represent a range of nearby natural and artificial structure (Figure 1 and Table 1).

The closest structure to the *Vandenberg* is a small patch of natural hard coral substrate and remnant sunken vessel rubble (Joe's Tug), located approximately 0.25 miles from the sinking location in a depth of approximately 40-65'. Joe's Tug has deteriorated over time and is considered a mixture of artificial and natural reef. The site is made up of scattered rubble and wreckage in and around a natural reef area. Part of the wreck sits on sandy bottom, while other parts and pieces are in and around the natural reef.

The closest all natural reef structure to the *Vandenberg* and Joe's Tug is the unmarked reef edge at Marker 32 Deep, approximately 0.80 miles shoreward of the *Vandenberg* sinking site. This reef is comprised of a sloping drop-off starting at approximately 50' and gradually increasing to a depth of approximately 75' where it ends abruptly in a sandy bottom. The sloping portion of the reef features a sediment covered low profile hardbottom (most structure is less than 4' in relief) with sparse coverings of small hard corals, soft corals such as gorgonians, and sponges. At the base of the drop-off, several large coral heads (with profiles larger than 4' in relief) are scattered at varying distances from the reef edge. Shoreward of Marker 32 Deep is the popular dive site noted by the steel I-beam marker #32. This site includes a number of mooring buoys for day-boat use and the buoyed site surveyed during this project is referred to as the Marker 32 Topino Buoy. The surrounding area consists of shallow (20'-30' deep) spur and groove reef featuring high profile coral ridges and massive *Montastrea* coral heads, with up to 10' of relief, separated by narrow sand channels.

Located approximately 1.8 miles east of the sinking site are Western Sambo Deep and Western Sambo Shallow (marked by the buoy called "Haystacks"). These two sites are similar in depth and structure to the Marker 32 deeper and shallower sites, but differ from all other sites in that they are located inside a no-take Ecological Reserve zone of the FKNMS. Taking of any marine life is prohibited inside this zone. Again, the deeper site is unmarked while the shallow site includes a number of mooring buoys for day-boat use.

The furthest study sites from the *Vandenberg* (6.5 miles west) are Eastern Dry Rocks Deep and Eastern Dry Rocks Shallow, again featuring a deeper sloping reef similar in depth, structure, and mooring buoy access to the deeper and shallower sites at Marker 32 and Western Sambo.

All sites are publicly accessible and used regularly by the public. Shallow sites with mooring buoys are commonly used by dive and snorkel tour operators and private day boats, and where fishing is allowed, subject to recreational fishing pressure. The deeper sites are not regularly visited by either commercial or recreational vessels, though some fishing pressure likely occurs at these sites (other than within the Sambo reserve).



Table 2. Expert RDT (and +SV if relevant) survey effort (number of surveys) during the 2014-15 monitoring events

	<u>2014</u>	<u>2015</u>
	7/5/2014-	7/6/2015-
	7/11/2014	7/10/2015
<i>Gen. Hoyt S Vandenberg</i>	12 +8SV	8+9SV
Joe's Tug	11 +8SV	8+9SV
Marker 32 Deep	11	8
Marker 32 Shallow	11	8
Western Sambo Deep	11	9
Western Sambo Shallow	10	9
Eastern Dry Rocks Deep	10	8
Eastern Dry Rocks	10	8



Figure 1. Survey site locations.

Data Summary

A total of 152 Expert RDT surveys and 34 SV surveys were conducted at the 8 sites during the 2014-15 monitoring events. The REEF team reported 105 fish species during the expert RDT surveys at the *Vandenberg* and fish species richness has been steadily increasing on the *Vandenberg* since it was deployed in May 2009 (Figure 2).

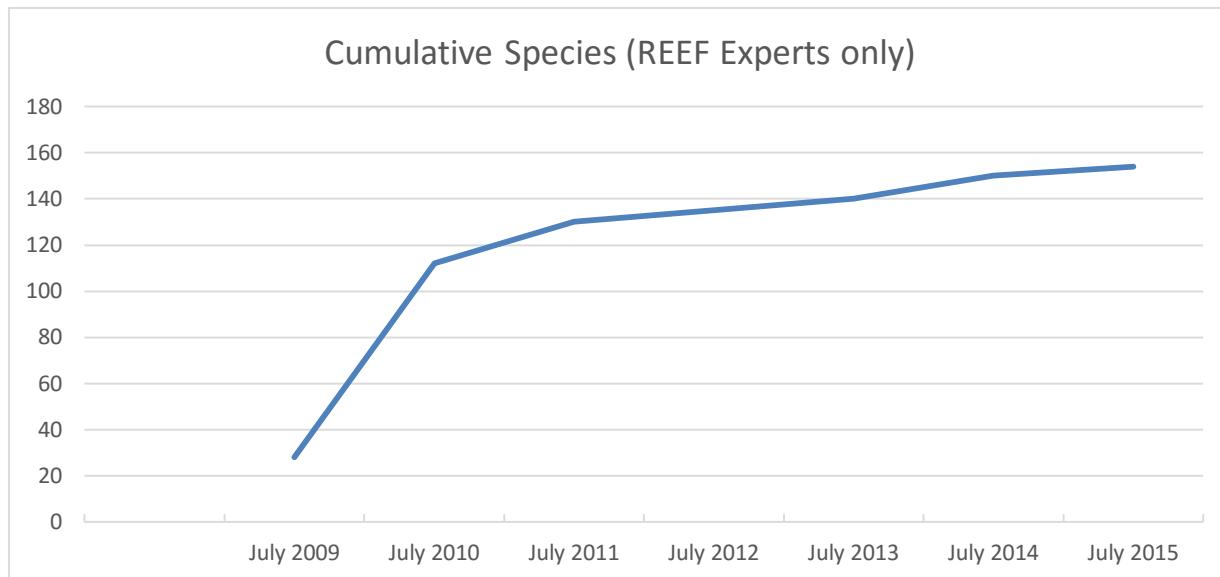


Figure 2. The cumulative number of fish species reported by REEF Experts in surveys conducted at the *Vandenberg* artificial reef since deployment.

A total of 184 species of fish were documented during expert RDT surveys in the 2014 monitoring and 189 in 2015 (Appendix 1). Species richness values, as recorded during RDT surveys, at the reference sites in 2014/2015 are: Joe's Tug (99/87), Marker 32 (117/108), Marker 32 Deep (91/84), Western Sambo (127/117), Western Sambo Deep (109/106), Eastern Dry Rocks (131/127), and Eastern Dry Rocks Deep (109/101). The deep reefs all featured lower species counts than their shallow-reef counterparts. The *Vandenberg* has consistently been one of the least species-rich sites throughout the monitoring project, though it is closely approaching other deep sites in richness.

Point Count Surveys

Point count survey data are given in Appendix 2, showing all species documented during SV surveys at the *Vandenberg* and Joe's Tug. For each species, average number of individuals per point count and averages of mean sizes are shown. A total of 65 species were documented at the two sites in 2014 and 72 species in 2015. At the Vandenberg in 2014/2015, 48/38 species were documented while 47/60 species were recorded at Joe's Tug. In 2014, Planktivores dominated the assemblage numbers at the Vandenberg with Round and Mackerel Scad and Yellowtail Snapper making up 2053 (82%) of the 2508 fish recorded. Joe's Tug numbers were dominated by French Grunt, Schoolmaster Snapper, Masked Gobies and Bicolor Damselfish, making up 866 (56%) of the 1540 fish recorded. In

2015, planktivores and piscivores again were the top species at the Vandenberg, however, scad were glaringly missing in the 2015 counts resulting in a significantly lower fish count of 1517 individuals (40% fewer than in 2014). At Joe's Tug 2015 data showed significant increases in species and abundance with Masked Gobies and Bicolor Damselfish again making up 55% the 3587 individuals present. Species and abundance comparisons are shown from both sites and both years in Appendix 2.

Non-native Species

Lionfish (*Pterois volitans*) was the only non-native fish species observed during the project monitoring events. In the first two years of the project (2009 and 2010), Lionfish were only sighted on 2 survey sites (Joe's Tug and Eastern Dry Rocks), both during 2010. In 2011, Lionfish were seen on 6 of the 8 sites (all but Joe's Tug and Western Sambo Shallow). In 2012, Lionfish were again seen on the majority of the sites (5 of the 8), and cumulatively during the course of the monitoring project, lionfish were seen on all 8 sites. During the 2014 monitoring effort, Lionfish were seen on half the sites including Marker 32 shallow (few), Marker 32 deep (few), Western Sambos shallow (single), and Eastern Dry Rocks deep (single). In 2015, Lionfish were seen on all but three sites with sightings including Vandenberg (single), Eastern Dry Rocks Deep (few), Western Sambos Deep (few), Marker 32 Deep (few) and Eastern Dry Rocks Shallow (single).

Tubastrea, which was seen by the REEF team for the first time on the *Vandenberg* during the 2012 monitoring events, was also seen in 2013 as four small (2-5 cm) colonies found on the starboard quarter of the bridge bow splash face at a depth of 72'. The 2014 monitoring effort found significant colonization of the bridge splash face as well as new colonies in the stern loading deck area. Surveys from 2015 continue to show an expansion of these colonies on the bridge splash face and stern loading deck and new colonies under the crow's nest (Figure 2).

The REEF team did not see any Acorn Barnacles (*Megabalanus coccopoma*) during the entire project period. None of the non-native species seen were removed by the REEF team.

Discussion

Data from REEF surveys across all years since deployment of the Vandenberg continue to show increases in species richness over time with 84% of total richness reached after 2 years. Species richness from 2015 was lower across the board compared to 2014, however patterns of richness among sites generally remained the same across the two years of this study. Lower species richness could be attributed to fewer RD surveyors in 2015 compared to 2014, however, it is unlikely to account for the entire difference. When comparing species lists across years there is 79% overlap between years and the majority of the richness data differences can be attributed to species which were not commonly seen in either year.

Abundance data from SV surveys at Vandenberg and Joe's Tug varied greatly between years. Species overlap was 65% between years, less than for RDT surveys at reference sites. Of note were the 2015 absence of scad (round and mackerel) on the Vandenberg which had dominated abundance data in 2014. A school of 400 round scad were counted on Joe's Tug in 2015 so it is possible the fish had moved away from the Vandenberg and onto other structures or reef areas. However, scad were not

documented on any of the REEF surveys from the Marker 32 or Eastern Dry Rocks sites, or on Western Sambo shallow, though they were reported from Western Sambos Deep. The reasoning for their absence at the Vandenberg is unknown.

Masked gobies, found at both sites in both years, were 8 times more abundant at Joe's Tug in 2015 than in 2014 accounting for a large percent of the abundance differences between years.

Literature Cited

Bohnsack, J. A., and S. P. Bannerot. 1986. A stationary visual census technique for quantitatively assessing community structure of coral reef fishes. NOAA Technical Report NMFS, 41: National Oceanic and Atmospheric Administration, Southeast Science Fisheries Center, Miami, FL. 15 p.

Schmitt, E.F. and K.M. Sullivan, 1996. Analysis of a volunteer method for collecting fish presence and abundance in the Florida Keys. Bulletin of Marine Science. 59(2):404-416

Additional Appendices

Appendix 3. Roving Diver Reports by Site

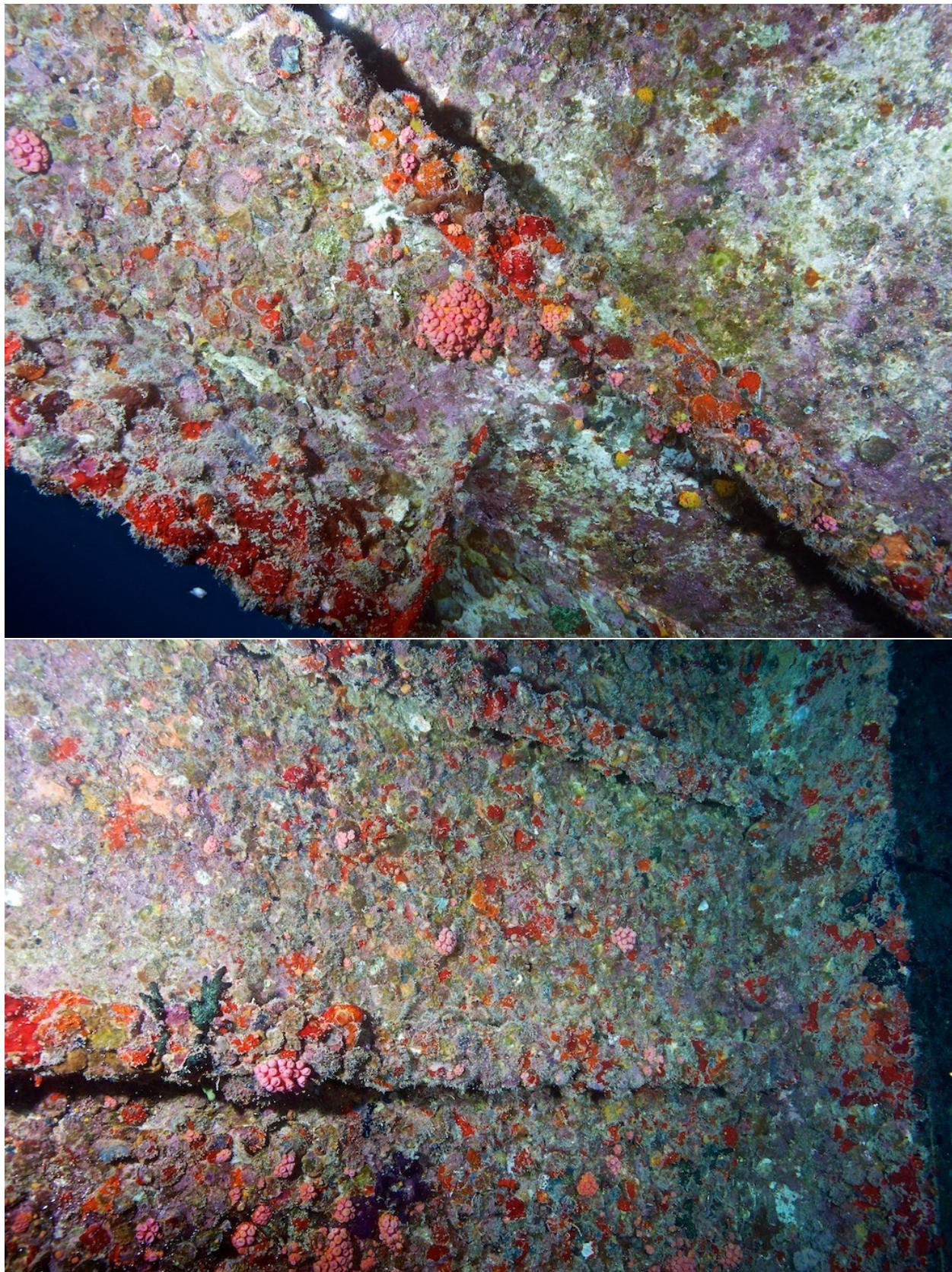
Appendix 4. Point Count Raw Data



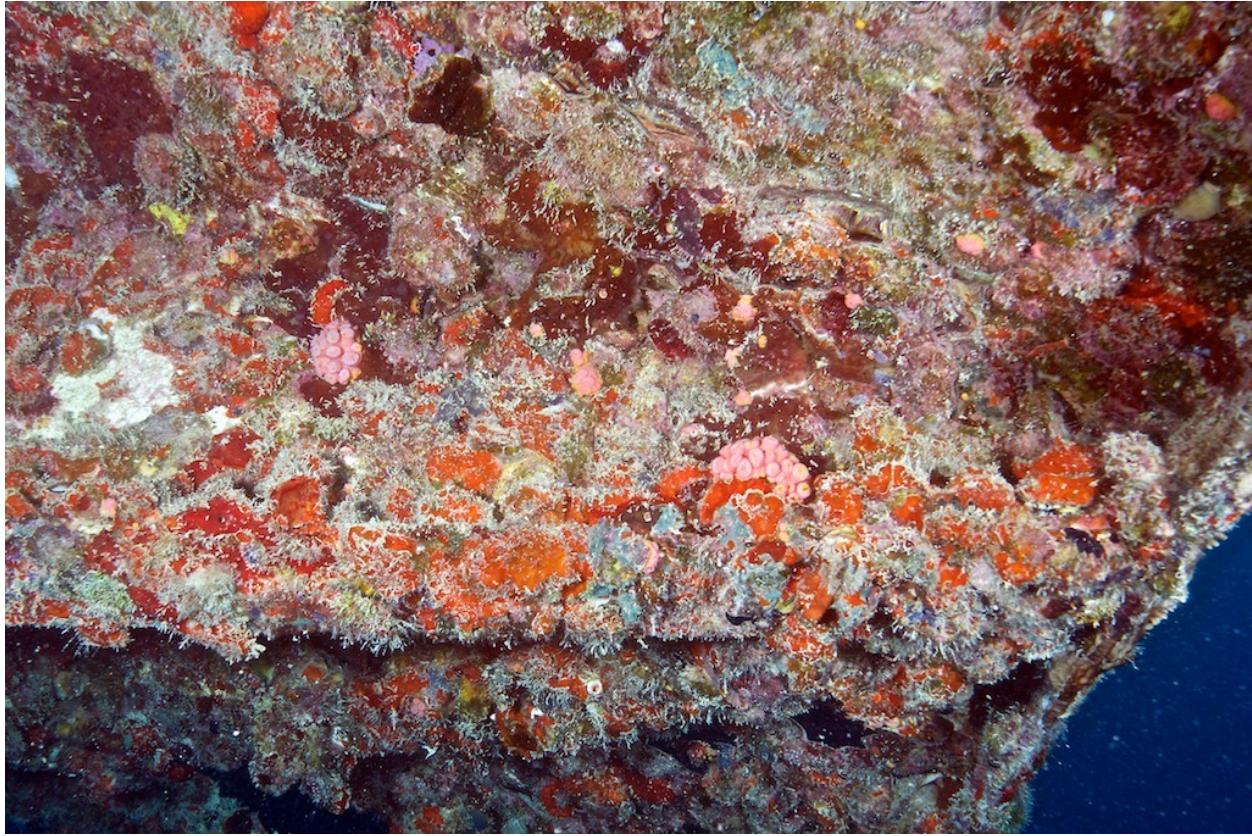
Appendix 2.

2015	Vandenberg abundance	Vandenberg mean size	Joes Tug Abundance	Joes Tug mean size		2014	Vandenberg abundance	Vandenberg mean size	Joes Tug Abundance	Joes Tug mean size
Banded Butterflyfish				1	8.0	Banded Butterflyfish	3	12.0	2	12.0
Bar Jack	131	21.5	14	21.6		Bar Jack	76	20.3	33	18.8
Bicolor Damselfish	143	5.1	327	4.4		Bicolor Damselfish	72	3.9	142	4.2
Black Grouper				1	80.0					
Blue Chromis				41	6.3	Blue Chromis	9	2.0	16	5.3
Blue Tang	16	17.3	8	20.6		Blue Tang	8	15.0	5	16.2
Bluehead	354	6.9	153	6.6		Bluehead	68	6.5	43	6.2
Bluestriped Grunt				51	23.3	Bluestriped Grunt	1	25.0	23	21.4
Boga	15	20.0								
Bridled Goby				19	4.7	Bridled Goby			19	3.2
Brown Chromis	33	7.7	1	11.0		Brown Chromis	1	11.0	74	10.6
Butter Hamlet				9	9.8	Butter Hamlet			1	6.0
Cero						Cero	3	47.5		
Clown Wrasse						Clown Wrasse			5	15.0
Cocoa Damselfish				2	8.5					
Coney	1	20.0								
Creole Wrasse	126	7.5	47	15.4		Creole Wrasse	4	12.3	62	15.8
Creole-fish	66	17.0				Creole-fish	6	21.0		
Crevalle Jack						Crevalle Jack	1	60.0		
Doctorfish	2	19.5	1	13.0						
Foureye Butterflyfish				13	9.3	Foureye Butterflyfish			4	9.0
French Angelfish				1	35.0	French Angelfish	1	50.0		
French Grunt				63	17.0	French Grunt			399	18.6
Goldspot Goby				3	6.0	Goldspot Goby	2	2.0	2	2.0
Gray Angelfish	2	30.5				Gray Angelfish	2	32.0	3	33.3
Gray Snapper	4	28.8				Gray Snapper	12	25.3	4	27.3
Graysby	6	20.0	9	16.3		Graysby	4	15.5	2	14.5
Great Barracuda	10	87.2	7	92.5		Great Barracuda	5	59.0		
Green Moray				2	175.0					
Greenblotch Parrotfish				11	6.2	Greenblotch Parrotfish	2	8.5		
Hamlet - Juvenile				1	7.0					
Harlequin Bass				4	7.7	Harlequin Bass			2	9.0
Hightail						Hightail			35	15.5
Hogfish						Hogfish	2	23.5		
Hovering Dartfish				1	6.0					
Longspine Squirrelfish						Longspine Squirrelfish			2	25.0
Mackerel scad						Mackerel scad	220	10.5		
Masked Goby/Glass Goby	29	3.0	1633	2.6		Masked Goby/Glass Goby	2	3.0	199	2.2
Midnight Parrotfish	1	50.0								
Neon Goby				8	4.0					
Ocean Surgeonfish				21	16.3	Ocean Surgeonfish	1	18.0	8	16.0
Orangespotted File	1	14.0				Orangespotted File	1	12.0		
Pallid Goby				2	4.0					
Porkfish	3	22.7	54	25.4		Porkfish	1	23.0	7	24.8
Princess Parrotfish				13	15.9	Princess Parrotfish			5	15.0
Purple Reeffish	141	3.5	55	2.4		Purple Reeffish	16	3.1	8	2.0
Queen Angelfish	3	21.0	3	26.3		Queen Angelfish	1	9.0	2	29.0
Queen Parrotfish				1	25.0	Queen Parrotfish			2	24.5
Rainbow Parrotfish	5	66.7				Rainbow Parrotfish	4	37.5		
Red Hind						Red Hind			1	21.0
Redband Parrotfish	21	15.6	26	14.6		Redband Parrotfish	14	16.0	11	16.7
Redtail Parrotfish						Redtail Parrotfish	1	12.0		
Reef Butterflyfish	7	11.5	3	13.3		Reef Butterflyfish	9	9.6		
Rock Beauty	6	11.3	1	17.0		Rock Beauty	1	21.0	4	14.5
Round Scad				400	18.0	Round Scad	1540	15.1	115	18.0
Schoolmaster				8	23.7	Schoolmaster			126	28.1
Scrawled Cowfish				1	24.0					
Scrawled Filefish	1	47.0	2	48.0		Scrawled Filefish	2	42.5	1	52.0
Seaweed Blenny						Seaweed Blenny	1	4.0		
Sergeant Major	3	15.0	113	11.7		Sergeant Major	1	6.0	35	11.4
Sharpnose Puffer	64	5.7	19	5.1		Sharpnose Puffer	40	5.6	3	5.0
Slippery Dick				1	7.0					
Smooth Trunk				1	18.0	Smooth Trunk			5	19.5
Spanish Hogfish	12	11.8	2	13.5		Spanish Hogfish	4	10.3	2	26.5
Spotfin Butterflyfish	4	13.0	3	14.5		Spotfin Butterflyfish	1	12.0		
Spotfin Hogfish	11	13.4				Spotfin Hogfish	11	12.7		
Spotted Drum						Spotted Drum	1	8.0		
Spotted Goatfish				1	21.0					
Spotted Moray	1	60.0								
Spotted Scorpionfish	1	20.0								
Stoplight Parrotfish				1	30.0	Stoplight Parrotfish	1	25.0	5	23.1
Striped Grunt	129	17.0				Striped Grunt	24	14.0		
Striped Parrotfish	16	15.1	24	11.6		Striped Parrotfish	8	17.0	3	14.0
Sunshinefish	65	5.3	11	3.9		Sunshinefish	19	3.4	14	3.7
Tobaccofish				1	8.0					
Trumpetfish	2	25.0	2	21.0		Trumpetfish			3	37.7
White Grunt				3	24.7	White Grunt			19	21.7
Yellow Jack						Yellow Jack	1	48.0		
Yellowcheek Wrasse				1	10.0					
Yellowhead Jawfish				3	9.0	Yellowhead Jawfish			2	11.0
Yellowhead Wrasse	7	14.6	33	8.6		Yellowhead Wrasse	8	8.1	21	8.3
Yellowtail Damselfish				1	8.0					

Figure 2.











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Geographic Zone Report

Region:

Tropical Western Atlantic ▾

Geographic Zone:

Eastern Dry Rocks Deep (HV Monitoring Site) (34080096)

Start Date:

Jul ▾ 10 ▾ 2015 ▾

End Date:

Jul ▾ 10 ▾ 2015 ▾

Species Display: Show:

Table (Classic) ▾

Common names ▾

[Change](#)

[Reset report options](#)

Survey Type: SA = Species & Abundance; SO = Species Only?

Click on a geographic place name to expand its sub-zones, or on a numeric zone ID to include only sites under that ID

	Site	Surveys				Bottom Time (H:M)
		Expert	Novice	SA	SO	
Code						
TWA						

3	FLORIDA (East Coast and Keys)	8	0	0	0	4:15
34	KEYS (Key Largo to Key West, including Fla. Bay)	8	0	0	0	4:15
3408	Key West	8	0	0	0	4:15
34080096	Eastern Dry Rocks Deep (HV Monitoring Site)	8	0	0	0	4:15
TOTALS		8	0	0	0	4:15

Species

Rank	SP#	Common Name	Total		Expert		Novice	
			SF%	DEN	SF%	DEN	SF%	DEN
1	0001	Blue Angelfish	100	1.5	100	1.5	0	0
2	0121	Butter Hamlet	100	2	100	2	0	0
3	0130	Hogfish	100	1.8	100	1.8	0	0
4	0114	Spanish Grunt	100	1.1	100	1.1	0	0
5	0111	Porkfish	100	2.4	100	2.4	0	0
6	0083	Masked Goby/Glass Goby	100	4	100	4	0	0
7	0095	Graysby	100	2	100	2	0	0
8	0108	French Grunt	100	2.4	100	2.4	0	0
9	0131	Spanish Hogfish	100	1.3	100	1.3	0	0
10	0152	Redband Parrotfish	100	2.5	100	2.5	0	0
11	0206	Ocean Surgeonfish	100	1.8	100	1.8	0	0
12	0213	Bluehead	100	2.9	100	2.9	0	0
13	0215	Creole Wrasse	100	2.8	100	2.8	0	0
14	0197	Yellowtail Snapper	100	2.8	100	2.8	0	0
15	0196	Schoolmaster	100	2.3	100	2.3	0	0
16	0156	Striped Parrotfish	100	2.5	100	2.5	0	0
17	0167	Sharpnose Puffer	100	2.4	100	2.4	0	0
18	0192	Gray Snapper	100	2.1	100	2.1	0	0
19	0048	Bicolor Damselfish	100	3.3	100	3.3	0	0
20	0117	White Grunt	100	2	100	2	0	0
21	0006	Rock Beauty	100	2.4	100	2.4	0	0
22	0031	Foureye Butterflyfish	100	2.1	100	2.1	0	0
23	0034	Spotfin Butterflyfish	100	1.8	100	1.8	0	0
24	0033	Reef Butterflyfish	100	1.9	100	1.9	0	0
25	0045	Sunshinefish	100	3	100	3	0	0
26	0044	Purple Reeffish	100	3.5	100	3.5	0	0
27	0683	Red Lionfish (exotic)	87.5	1.6	87.5	1.6	0	0
28	0042	Blue Chromis	87.5	2	87.5	2	0	0

29	0084	Neon Goby	87.5	1.7	87.5	1.7	0	0
30	0116	Tomtate	87.5	2.7	87.5	2.7	0	0
31	0193	Lane Snapper	87.5	1.3	87.5	1.3	0	0
32	0220	Yellowhead Wrasse	87.5	2.1	87.5	2.1	0	0
33	0204	Blue Tang	87.5	1.9	87.5	1.9	0	0
34	0132	Spotfin Hogfish	87.5	1.7	87.5	1.7	0	0
35	0133	Bar Jack	87.5	2.1	87.5	2.1	0	0
36	0046	Yellowtail Reeffish	87.5	1.4	87.5	1.4	0	0
37	0049	Cocoa Damselfish	87.5	1.6	87.5	1.6	0	0
38	0194	Mahogany Snapper	87.5	1.9	87.5	1.9	0	0
39	0149	Princess Parrotfish	87.5	1.6	87.5	1.6	0	0
40	0155	Stoplight Parrotfish	75	1.5	75	1.5	0	0
41	0154	Redtail Parrotfish	75	1.3	75	1.3	0	0
42	0120	Blue Hamlet	75	1.2	75	1.2	0	0
43	0105	Bluestriped Grunt	75	2	75	2	0	0
44	0201	Longspine Squirrelfish	75	1.7	75	1.7	0	0
45	0205	Doctorfish	75	1.8	75	1.8	0	0
46	0079	Bridled Goby Complex (Bridled/Sand-Canyon/Patch-Reef)	62.5	2	62.5	2	0	0
47	0077	Yellow Goatfish	62.5	1.8	62.5	1.8	0	0
48	0005	Queen Angelfish	62.5	1.2	62.5	1.2	0	0
49	0003	French Angelfish	62.5	1.8	62.5	1.8	0	0
50	0091	Black Grouper	62.5	1.4	62.5	1.4	0	0
51	0066	Spotted Moray	50	1	50	1	0	0
52	0135	Crevalle Jack	50	1.8	50	1.8	0	0
53	0239	Trumpetfish	50	1.3	50	1.3	0	0
54	0007	Great Barracuda	50	1.5	50	1.5	0	0
55	0078	Blue Dartfish (Blue Goby)	50	2.3	50	2.3	0	0
56	0032	Longsnout Butterflyfish	37.5	1	37.5	1	0	0
57	0931	Bluelip Hamlet (Tan Type 2 (no spot)/Brown Variation of Black)	37.5	1.3	37.5	1.3	0	0
58	0539	School Bass	37.5	2.7	37.5	2.7	0	0
59	0228	Yellowhead Jawfish	37.5	1.7	37.5	1.7	0	0
60	0843	Hamlet - Juvenile	37.5	1.3	37.5	1.3	0	0

61	0148	Midnight Parrotfish		37.5	1	37.5	1	0	0
62	0102	Tiger Grouper		37.5	1	37.5	1	0	0
63	0099	Red Hind		37.5	1	37.5	1	0	0
64	0086	Pallid Goby		37.5	1.3	37.5	1.3	0	0
65	0076	Spotted Goatfish		37.5	1.3	37.5	1.3	0	0
66	0043	Brown Chromis		37.5	2	37.5	2	0	0
67	0101	Scamp		37.5	1.3	37.5	1.3	0	0
68	0118	Barred Hamlet (Caribbean)		37.5	1	37.5	1	0	0
69	0059	Spotted Drum		25	1.5	25	1.5	0	0
70	0082	Hovering Dartfish (Hovering Goby)		25	2	25	2	0	0
71	0036	Belted Cardinalfish		25	1	25	1	0	0
72	0336	Roughhead Blenny		25	1	25	1	0	0
73	0361	Sponge Cardinalfish		25	1	25	1	0	0
74	0051	Longfin Damselfish		25	1	25	1	0	0
75	0058	Reef Croaker		25	1.5	25	1.5	0	0
76	0497	Knobbed Porgy		25	1	25	1	0	0
77	0153	Yellowtail (Redfin) Parrotfish		25	1	25	1	0	0
78	0164	Bandtail Puffer		25	1	25	1	0	0
79	0160	Saucereye Porgy		25	1	25	1	0	0
80	0179	Chalk Bass		12.5	3	12.5	3	0	0
81	0181	Harlequin Bass		12.5	1	12.5	1	0	0
82	0151	Rainbow Parrotfish		12.5	1	12.5	1	0	0
83	0221	Bermuda Chub/Gray Chub		12.5	2	12.5	2	0	0
84	0027	Smooth Trunkfish		12.5	1	12.5	1	0	0
85	0158	Littlehead Porgy		12.5	1	12.5	1	0	0
86	0792	Juvenile Grunt		12.5	1	12.5	1	0	0
87	0054	Yellowtail Damselfish		12.5	1	12.5	1	0	0
88	0081	Goldspot Goby		12.5	1	12.5	1	0	0
89	0053	Threespot Damselfish		12.5	1	12.5	1	0	0
90	0185	Tobaccofish		12.5	2	12.5	2	0	0
91	0203	Squirrelfish		12.5	1	12.5	1	0	0
92	0047	Beaugregory		12.5	1	12.5	1	0	0
93	0035	Barred Cardinalfish		12.5	1	12.5	1	0	0
94	0039	Flamefish		12.5	1	12.5	1	0	0

95	0100	Rock Hind	12.5	1	12.5	1	0	0
96	0020	Sailfin Blenny	12.5	1	12.5	1	0	0
97	0214	Clown Wrasse	12.5	2	12.5	2	0	0
98	0004	Gray Angelfish	12.5	1	12.5	1	0	0
99	0209	Ocean Triggerfish	12.5	1	12.5	1	0	0
100	0147	Greenblotch Parrotfish	12.5	2	12.5	2	0	0
101	0109	Black Margate	12.5	1	12.5	1	0	0

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Geographic Zone Report

Region:

Tropical Western Atlantic ▾

Geographic Zone:

Eastern Dry Rocks Shallow (34080008)

Start Date:

Jul ▾ 10 ▾ 2015 ▾

End Date:

Jul ▾ 10 ▾ 2015 ▾

Species Display: Show:

Table (Classic) ▾

Common names ▾

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Survey Type: SA = Species & Abundance; SO = Species Only?

Click on a geographic place name to expand its sub-zones, or on a numeric zone ID to include only sites under that ID

	Site	Surveys				Bottom Time
		Expert	Novice	SA	SO	
Code						(H:M)
<u>TWA</u>						
3	FLORIDA (East Coast and Keys)			8	0	0:0
34	KEYS (Key Largo to Key West, including Fla. Bay)	8	0	0	0	8:00
<u>3408</u>	Key West			8	0	0:0
<u>34080008</u>	Eastern Dry Rocks Shallow			8	0	0:0
TOTALS				8	0	0:0

Species

Rank	SP#	Common Name	Total		Expert		Novice	
			SF%	DEN	SF%	DEN	SF%	DEN
1	0156	Striped Parrotfish	100	2.5	100	2.5	0	0
2	0155	Stoplight Parrotfish	100	2.4	100	2.4	0	0
3	0154	Redtail Parrotfish	100	1.9	100	1.9	0	0
4	0152	Redband Parrotfish	100	2.6	100	2.6	0	0
5	0054	Yellowtail Damselfish	100	2.1	100	2.1	0	0
6	0167	Sharpnose Puffer	100	2.1	100	2.1	0	0
7	0049	Cocoa Damselfish	100	1.6	100	1.6	0	0
8	0105	Bluestriped Grunt	100	3.4	100	3.4	0	0
9	0051	Longfin Damselfish	100	1.6	100	1.6	0	0
10	0052	Sergeant Major	100	3.4	100	3.4	0	0
11	0150	Queen Parrotfish	100	2.4	100	2.4	0	0
12	0131	Spanish Hogfish	100	1.9	100	1.9	0	0
13	0095	Graysby	100	1.8	100	1.8	0	0
14	0111	Porkfish	100	2.3	100	2.3	0	0
15	0108	French Grunt	100	3.4	100	3.4	0	0
16	0106	Caesar Grunt	100	2.5	100	2.5	0	0
17	0084	Neon Goby	100	2	100	2	0	0
18	0083	Masked Goby/Glass Goby	100	2.9	100	2.9	0	0
19	0079	Bridled Goby Complex (Bridled/Sand-Canyon/Patch-Reef)	100	2.4	100	2.4	0	0
20	0080	Colon Goby	100	1.8	100	1.8	0	0
21	0081	Goldspot Goby	100	2	100	2	0	0
22	0117	White Grunt	100	2.6	100	2.6	0	0
23	0048	Bicolor Damselfish	100	3.6	100	3.6	0	0
24	0192	Gray Snapper	100	3.1	100	3.1	0	0
25	0194	Mahogany Snapper	100	2.3	100	2.3	0	0
26	0006	Rock Beauty	100	1.6	100	1.6	0	0
27	0205	Doctorfish	100	1.8	100	1.8	0	0
28	0218	Slippery Dick	100	3.3	100	3.3	0	0
29	0007	Great Barracuda	100	2	100	2	0	0
30	0206	Ocean Surgeonfish	100	2.6	100	2.6	0	0

31	0215	Creole Wrasse	100	3	100	3	0	0
32	0214	Clown Wrasse	100	2.8	100	2.8	0	0
33	0213	Bluehead	100	3.9	100	3.9	0	0
34	0031	Foureye Butterflyfish	100	2	100	2	0	0
35	0034	Spotfin Butterflyfish	100	1.8	100	1.8	0	0
36	0044	Purple Reeffish	100	2.3	100	2.3	0	0
37	0197	Yellowtail Snapper	100	3.3	100	3.3	0	0
38	0196	Schoolmaster	100	2.8	100	2.8	0	0
39	0043	Brown Chromis	100	3.5	100	3.5	0	0
40	0042	Blue Chromis	100	2.4	100	2.4	0	0
41	0204	Blue Tang	100	3.1	100	3.1	0	0
42	0220	Yellowhead Wrasse	100	3.1	100	3.1	0	0
43	0201	Longspine Squirrelfish	100	2	100	2	0	0
44	0216	Puddingwife	100	2.1	100	2.1	0	0
45	0336	Roughhead Blenny	87.5	2	87.5	2	0	0
46	0930	Topsail Chub	87.5	2	87.5	2	0	0
47	0112	Sailors Choice	87.5	1.6	87.5	1.6	0	0
48	0144	Blue Parrotfish	87.5	1.7	87.5	1.7	0	0
49	0203	Squirrelfish	87.5	2.1	87.5	2.1	0	0
50	0151	Rainbow Parrotfish	87.5	1.6	87.5	1.6	0	0
51	0149	Princess Parrotfish	87.5	1.6	87.5	1.6	0	0
52	0133	Bar Jack	87.5	2.3	87.5	2.3	0	0
53	0114	Spanish Grunt	87.5	1.4	87.5	1.4	0	0
54	0130	Hogfish	87.5	1.6	87.5	1.6	0	0
55	0077	Yellow Goatfish	87.5	2.3	87.5	2.3	0	0
56	0021	Seaweed Blenny	87.5	1.7	87.5	1.7	0	0
57	0091	Black Grouper	87.5	1.4	87.5	1.4	0	0
58	0622	Unidentified Triplefin species	75	1.3	75	1.3	0	0
59	0792	Juvenile Grunt	75	2	75	2	0	0
60	0071	Slender Filefish	75	1.3	75	1.3	0	0
61	0067	Viper Moray	75	1	75	1	0	0
62	0153	Yellowtail (Redfin) Parrotfish	75	2.2	75	2.2	0	0
63	0082	Hovering Dartfish (Hovering Goby)	75	1.2	75	1.2	0	0
64	0339	Wrasse Blenny	75	1.8	75	1.8	0	0

65	0097	Nassau Grouper	75	1	75	1	0	0
66	0221	Bermuda Chub/Gray Chub	75	2.2	75	2.2	0	0
67	0019	Saddled Blenny	75	1.7	75	1.7	0	0
68	0050	Dusky Damselfish	75	1.7	75	1.7	0	0
69	0040	Twospot Cardinalfish	62.5	1.6	62.5	1.6	0	0
70	0047	Beaugregory	62.5	1.4	62.5	1.4	0	0
71	0202	Reef Squirrelfish	62.5	1.6	62.5	1.6	0	0
72	0028	Spotted Trunkfish	62.5	1	62.5	1	0	0
73	0238	Sand Tilefish	62.5	1.6	62.5	1.6	0	0
74	0148	Midnight Parrotfish	62.5	1.4	62.5	1.4	0	0
75	0182	Lantern Bass	62.5	1	62.5	1	0	0
76	0141	Yellow Jack	62.5	1.4	62.5	1.4	0	0
77	0039	Flamefish	62.5	1.8	62.5	1.8	0	0
78	0020	Sailfin Blenny	50	1	50	1	0	0
79	0226	Redspotted Hawkfish	50	1.5	50	1.5	0	0
80	0181	Harlequin Bass	50	1.5	50	1.5	0	0
81	0070	Scrawled Filefish	50	1	50	1	0	0
82	0076	Spotted Goatfish	50	1.5	50	1.5	0	0
83	0086	Pallid Goby	50	1	50	1	0	0
84	0943	Brassy Chub	50	2.8	50	2.8	0	0
85	0069	Orangespotted Filefish	50	1.8	50	1.8	0	0
86	0147	Greenblotch Parrotfish	50	1.5	50	1.5	0	0
87	0113	Smallmouth Grunt	37.5	3	37.5	3	0	0
88	0157	Jolthead Porgy	37.5	2	37.5	2	0	0
89	0173	Green Razorfish	37.5	1	37.5	1	0	0
90	0030	Banded Butterflyfish	37.5	1.7	37.5	1.7	0	0
91	0166	Porcupinefish	37.5	1.7	37.5	1.7	0	0
92	0004	Gray Angelfish	37.5	1	37.5	1	0	0
93	0018	Rosy Blenny	37.5	1.3	37.5	1.3	0	0
94	0212	Blackear Wrasse	37.5	1	37.5	1	0	0
95	0005	Queen Angelfish	37.5	1.3	37.5	1.3	0	0
96	0523	Whitefin Sharksucker	37.5	1.3	37.5	1.3	0	0
97	0059	Spotted Drum	37.5	1	37.5	1	0	0
98	0239	Trumpetfish	37.5	1.3	37.5	1.3	0	0

99	0187	Nurse Shark	37.5	1	37.5	1	0	0
100	0160	Saucereye Porgy	37.5	1.7	37.5	1.7	0	0
101	0100	Rock Hind	37.5	1.3	37.5	1.3	0	0
102	0230	Sand Diver	37.5	1.7	37.5	1.7	0	0
103	0109	Black Margate	37.5	1.7	37.5	1.7	0	0
104	0236	Glassy Sweeper	25	3.5	25	3.5	0	0
105	0121	Butter Hamlet	25	1	25	1	0	0
106	0053	Threespot Damselfish	25	2	25	2	0	0
107	0003	French Angelfish	25	1.5	25	1.5	0	0
108	0045	Sunshinefish	25	1	25	1	0	0
109	0036	Belted Cardinalfish	25	1	25	1	0	0
110	0063	Green Moray	25	1	25	1	0	0
111	0058	Reef Croaker	25	1	25	1	0	0
112	0497	Knobbed Porgy	25	1.5	25	1.5	0	0
113	0592	Townsend Angelfish (Hybrid Queen/Blue)	12.5	1	12.5	1	0	0
114	0356	Mimic Cardinalfish	12.5	1	12.5	1	0	0
115	0483	Atlantic Needlefish	12.5	3	12.5	3	0	0
116	0683	Red Lionfish (exotic)	12.5	1	12.5	1	0	0
117	0539	School Bass	12.5	3	12.5	3	0	0
118	0046	Yellowtail Reeffish	12.5	1	12.5	1	0	0
119	0056	Highhat	12.5	2	12.5	2	0	0
120	0195	Mutton Snapper	12.5	1	12.5	1	0	0
121	0139	Permit	12.5	1	12.5	1	0	0
122	0116	Tomtate	12.5	2	12.5	2	0	0
123	0099	Red Hind	12.5	1	12.5	1	0	0
124	0198	Blackbar Soldierfish	12.5	3	12.5	3	0	0
125	0199	Dusky Squirrelfish	12.5	2	12.5	2	0	0
126	0228	Yellowhead Jawfish	12.5	2	12.5	2	0	0
127	0023	Boga	12.5	1	12.5	1	0	0
128	0026	Scrawled Cowfish	12.5	1	12.5	1	0	0
129	0200	Longjaw Squirrelfish	12.5	1	12.5	1	0	0
130	0232	Silversides, Herrings, Anchovies	12.5	3	12.5	3	0	0

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Geographic Zone Report

Region:

Tropical Western Atlantic ▾

Geographic Zone:

Joe's Tug (34080010)

Start Date:

Jul ▾ 7 ▾ 2015 ▾

End Date:

Jul ▾ 7 ▾ 2015 ▾

Species Display: Show:

Table (Classic) ▾

Common names ▾

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Survey Type: SA = Species & Abundance; SO = Species Only?

Click on a geographic place name to expand its sub-zones, or on a numeric zone ID to include only sites under that ID

	Site	Surveys				Bottom Time
		Expert	Novice	SA	SO	
Code						(H:M)
<u>TWA</u>						
3	FLORIDA (East Coast and Keys)	8	0	4	0	6:32
34	KEYS (Key Largo to Key West, including Fla. Bay)	8	0	4	0	6:32
<u>3408</u>	Key West	8	0	4	0	6:32
<u>34080010</u>	Joe's Tug	8	0	4	0	6:32
TOTALS		8	0	4	0	6:32

Species

Rank	SP#	Common Name	Total		Expert		Novice	
			SF%	DEN	SF%	DEN	SF%	DEN
1	0031	Foureye Butterflyfish	100	1.9	100	2	100	1.8
2	0213	Bluehead	100	2.9	100	3	100	2.8
3	0042	Blue Chromis	100	2.1	100	2.3	100	1.8
4	0048	Bicolor Damselfish	100	3	100	3	100	3
5	0052	Sergeant Major	100	2.7	100	2.9	100	2.3
6	0108	French Grunt	100	3.3	100	3.3	100	3.3
7	0152	Redband Parrotfish	100	2.3	100	2.4	100	2
8	0167	Sharpnose Puffer	100	2	100	2.3	100	1.5
9	0105	Bluestriped Grunt	100	2.7	100	2.8	100	2.5
10	0117	White Grunt	91.7	2	100	2.1	75	1.7
11	0204	Blue Tang	91.7	2	100	2	75	2
12	0206	Ocean Surgeonfish	91.7	2.3	100	2.4	75	2
13	0185	Tobaccofish	91.7	1.5	100	1.6	75	1.3
14	0083	Masked Goby/Glass Goby	91.7	3.4	100	3.5	75	3
15	0044	Purple Reeffish	91.7	2.5	100	2.9	75	1.7
16	0196	Schoolmaster	91.7	2.7	100	2.6	75	3
17	0006	Rock Beauty	91.7	1.7	100	1.8	75	1.7
18	0156	Striped Parrotfish	91.7	2.2	100	2.4	75	1.7
19	0197	Yellowtail Snapper	91.7	2.5	100	2.8	75	2
20	0220	Yellowhead Wrasse	91.7	2.3	100	2.4	75	2
21	0133	Bar Jack	91.7	1.8	100	1.9	75	1.7
22	0223	Lancer Dragonet	83.3	1.4	87.5	1.4	75	1.3
23	0155	Stoplight Parrotfish	83.3	1.5	87.5	1.4	75	1.7
24	0076	Spotted Goatfish	83.3	1.6	87.5	1.6	75	1.7
25	0150	Queen Parrotfish	83.3	1.9	100	1.9	50	2
26	0111	Porkfish	83.3	3.1	87.5	3.1	75	3
27	0131	Spanish Hogfish	83.3	1.7	100	1.6	50	2
28	0045	Sunshinefish	83.3	1.9	100	2.1	50	1
29	0054	Yellowtail Damselfish	83.3	1.8	87.5	1.7	75	2
30	0095	Graysby	83.3	2	87.5	2	75	2

31	0132	Spotfin Hogfish	75	1.2	75	1.3	75	1
32	0149	Princess Parrotfish	75	2.2	100	2.4	25	1
33	0145	Bluelip Parrotfish	75	2	87.5	2	50	2
34	0179	Chalk Bass	75	1.8	87.5	1.9	50	1.5
35	0078	Blue Dartfish (Blue Goby)	75	1.7	87.5	1.6	50	2
36	0034	Spotfin Butterflyfish	75	1.6	87.5	1.6	50	1.5
37	0043	Brown Chromis	75	2.6	87.5	2.7	50	2
38	0056	Highhat	75	2.7	75	2.8	75	2.3
39	0079	Bridled Goby Complex (Bridled/Sand-Canyon/Patch-Reef)	75	1.8	100	1.9	25	1
40	0228	Yellowhead Jawfish	75	1.9	87.5	2	50	1.5
41	0215	Creole Wrasse	66.7	2.4	75	2.7	50	1.5
42	0147	Greenblotch Parrotfish	66.7	1.8	100	1.8	0	0
43	0033	Reef Butterflyfish	66.7	1.4	75	1.5	50	1
44	0130	Hogfish	66.7	1.4	50	1.8	100	1
45	0084	Neon Goby	66.7	1.8	75	2	50	1
46	0063	Green Moray	58.3	1	87.5	1	0	0
47	0192	Gray Snapper	50	2	75	2	0	0
48	0081	Goldspot Goby	50	1.8	75	1.8	0	0
49	0030	Banded Butterflyfish	50	1.2	50	1.3	50	1
50	0027	Smooth Trunkfish	50	1.3	75	1.3	0	0
51	0001	Blue Angelfish	50	1.2	75	1.2	0	0
52	0181	Harlequin Bass	41.7	1.2	50	1.3	25	1
53	0209	Ocean Triggerfish	41.7	2.2	50	2.5	25	1
54	0082	Hovering Dartfish (Hovering Goby)	41.7	1.4	50	1.5	25	1
55	0121	Butter Hamlet	41.7	1.6	37.5	1.7	50	1.5
56	0049	Cocoa Damselfish	41.7	1.4	62.5	1.4	0	0
57	0059	Spotted Drum	33.3	1.3	50	1.3	0	0
58	0239	Trumpetfish	33.3	1.5	37.5	1.7	25	1
59	0005	Queen Angelfish	33.3	1	50	1	0	0
60	0178	Spotted Scorpionfish	33.3	1	37.5	1	25	1
61	0106	Caesar Grunt	33.3	1.3	37.5	1	25	2
62	0201	Longspine Squirrelfish	25	1.7	37.5	1.7	0	0
63	0109	Black Margate	25	1	25	1	25	1

64	0099	Red Hind	25	1	12.5	1	50	1
65	0086	Pallid Goby	25	1.7	37.5	1.7	0	0
66	0153	Yellowtail (Redfin) Parrotfish	25	1.7	12.5	2	50	1.5
67	0154	Redtail Parrotfish	16.7	1.5	25	1.5	0	0
68	0051	Longfin Damselfish	16.7	1	25	1	0	0
69	0050	Dusky Damselfish	16.7	1.5	0	0	50	1.5
70	0007	Great Barracuda	16.7	1	25	1	0	0
71	0003	French Angelfish	16.7	1	25	1	0	0
72	0080	Colon Goby	16.7	1	12.5	1	25	1
73	0136	Greater Amberjack	16.7	1	25	1	0	0
74	0182	Lantern Bass	16.7	1.5	25	1.5	0	0
75	0144	Blue Parrotfish	16.7	1	25	1	0	0
76	0028	Spotted Trunkfish	16.7	1	12.5	1	25	1
77	0004	Gray Angelfish	8.3	1	0	0	25	1
78	0336	Roughhead Blenny	8.3	2	12.5	2	0	0
79	0235	Atlantic Spadefish	8.3	2	12.5	2	0	0
80	0231	Sharksucker	8.3	2	12.5	2	0	0
81	0604	Remora	8.3	2	12.5	2	0	0
82	0053	Threespot Damselfish	8.3	1	12.5	1	0	0
83	0070	Scrawled Filefish	8.3	2	12.5	2	0	0
84	0107	Cottonwick	8.3	4	12.5	4	0	0
85	0151	Rainbow Parrotfish	8.3	2	0	0	25	2
86	0066	Spotted Moray	8.3	1	12.5	1	0	0
87	0205	Doctorfish	8.3	2	12.5	2	0	0
88	0217	Rainbow Wrasse	8.3	2	0	0	25	2
89	0047	Beaugregory	8.3	1	12.5	1	0	0
90	0218	Slippery Dick	8.3	2	0	0	25	2

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Geographic Zone Report

Region:

Tropical Western Atlantic ▼

Geographic Zone:

Marker 32 Deep (HV Monitoring Site) (34080095)

Start Date:

Jul ▼ 6 ▼ 2015 ▼

End Date:

Jul ▼ 6 ▼ 2015 ▼

Species Display: Show:

Table (Classic) ▼

Common names ▼

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Survey Type: SA = Species & Abundance; SO = Species Only?

Click on a geographic place name to expand its sub-zones, or on a numeric zone ID to include only sites under that ID

	Site	Surveys				Bottom Time
		Expert	Novice	SA	SO	
Code						(H:M)
<u>TWA</u>						
3	FLORIDA (East Coast and Keys)			8	0	2 0 5:23
34	KEYS (Key Largo to Key West, including Fla. Bay)	8	0	2	0	5:23
<u>3408</u>	Key West			8	0	2 0 5:23
<u>34080095</u>	Marker 32 Deep (HV Monitoring Site)			8	0	2 0 5:23
TOTALS				8	0	2 0 5:23

Species

Rank	SP#	Common Name	Total		Expert		Novice	
			SF%	DEN	SF%	DEN	SF%	DEN
1	0206	Ocean Surgeonfish	100	2.2	100	2.4	100	1.5
2	0108	French Grunt	100	2.7	100	2.8	100	2.5
3	0213	Bluehead	100	3.1	100	3.1	100	3
4	0220	Yellowhead Wrasse	100	2.4	100	2.5	100	2
5	0048	Bicolor Damselfish	100	2.8	100	2.9	100	2.5
6	0117	White Grunt	100	2.3	100	2.5	100	1.5
7	0197	Yellowtail Snapper	100	2.7	100	2.6	100	3
8	0155	Stoplight Parrotfish	100	1.3	100	1.3	100	1.5
9	0167	Sharpnose Puffer	100	2.6	100	2.6	100	2.5
10	0152	Redband Parrotfish	100	2.4	100	2.6	100	1.5
11	0133	Bar Jack	100	2.3	100	1.9	100	4
12	0121	Butter Hamlet	100	2.4	100	2.4	100	2.5
13	0045	Sunshinefish	100	2	100	2.1	100	1.5
14	0083	Masked Goby/Glass Goby	100	3.9	100	3.9	100	4
15	0042	Blue Chromis	100	2.5	100	2.5	100	2.5
16	0034	Spotfin Butterflyfish	100	2	100	2	100	2
17	0031	Foureye Butterflyfish	100	2.1	100	2.1	100	2
18	0006	Rock Beauty	100	2.1	100	2.1	100	2
19	0100	Rock Hind	90	1.4	87.5	1.6	100	1
20	0095	Graysby	90	2	100	2	50	2
21	0105	Bluestriped Grunt	90	2.1	87.5	2.1	100	2
22	0156	Striped Parrotfish	90	2.8	100	2.8	50	3
23	0131	Spanish Hogfish	90	1.8	87.5	1.7	100	2
24	0084	Neon Goby	90	1.9	87.5	2	100	1.5
25	0111	Porkfish	90	2.1	87.5	2.1	100	2
26	0204	Blue Tang	80	2.1	75	2.2	100	2
27	0149	Princess Parrotfish	80	2.1	75	2	100	2.5
28	0033	Reef Butterflyfish	80	2	100	2	0	0
29	0044	Purple Reeffish	80	2.8	75	3	100	2
30	0049	Cocoa Damselfish	80	1.6	87.5	1.7	50	1

31	0130	Hogfish	70	1.7	75	1.7	50	2
32	0193	Lane Snapper	70	2.7	62.5	2.6	100	3
33	0215	Creole Wrasse	70	2.6	75	2.7	50	2
34	0001	Blue Angelfish	70	1.3	75	1.2	50	2
35	0147	Greenblotch Parrotfish	70	1.9	75	1.8	50	2
36	0056	Highhat	70	2	62.5	2	100	2
37	0683	Red Lionfish (exotic)	70	1.3	62.5	1.4	100	1
38	0057	Jackknife-Fish	60	1	50	1	100	1
39	0046	Yellowtail Reeffish	60	1.8	75	1.8	0	0
40	0076	Spotted Goatfish	50	2	50	2	50	2
41	0439	Marbled Grouper	50	1	62.5	1	0	0
42	0171	Spotted Eagle Ray	50	1	62.5	1	0	0
43	0066	Spotted Moray	50	1.2	50	1.3	50	1
44	0059	Spotted Drum	50	1.4	50	1.3	50	2
45	0192	Gray Snapper	50	1.4	62.5	1.4	0	0
46	0132	Spotfin Hogfish	40	1.8	50	1.8	0	0
47	0181	Harlequin Bass	40	1.5	37.5	1.7	50	1
48	0027	Smooth Trunkfish	40	1.3	25	1	100	1.5
49	0081	Goldspot Goby	40	1	50	1	0	0
50	0079	Bridled Goby Complex (Bridled/Sand-Canyon/Patch-Reef)	40	1.3	37.5	1.3	50	1
51	0053	Threespot Damselfish	40	1.3	37.5	1	50	2
52	0205	Doctorfish	40	2	50	2	0	0
53	0116	Tomtate	30	2.7	25	3	50	2
54	0239	Trumpetfish	30	1	25	1	50	1
55	0063	Green Moray	30	1	12.5	1	100	1
56	0154	Redtail Parrotfish	30	1.3	37.5	1.3	0	0
57	0194	Mahogany Snapper	30	1	25	1	50	1
58	0336	Roughhead Blenny	20	1	25	1	0	0
59	0339	Wrasse Blenny	20	1	25	1	0	0
60	0178	Spotted Scorpionfish	20	1	25	1	0	0
61	0201	Longspine Squirrelfish	20	2	25	2	0	0
62	0539	School Bass	20	2	25	2	0	0
63	0233	Common Snook	20	2	25	2	0	0

64	0118	Barred Hamlet (Caribbean)	20	1	12.5	1	50	1
65	0052	Sergeant Major	20	2	25	2	0	0
66	0086	Pallid Goby	20	2	25	2	0	0
67	0043	Brown Chromis	20	3	12.5	3	50	3
68	0007	Great Barracuda	20	1	25	1	0	0
69	0003	French Angelfish	20	1	25	1	0	0
70	0005	Queen Angelfish	20	1	25	1	0	0
71	0099	Red Hind	20	1	25	1	0	0
72	0069	Orangespotted Filefish	20	1	25	1	0	0
73	0163	Balloonfish	20	1	25	1	0	0
74	0153	Yellowtail (Redfin) Parrotfish	20	1.5	12.5	1	50	2
75	0115	Striped Grunt	20	2	25	2	0	0
76	0026	Scrawled Cowfish	10	1	0	0	50	1
77	0151	Rainbow Parrotfish	10	1	0	0	50	1
78	0592	Townsend Angelfish (Hybrid Queen/Blue)	10	1	0	0	50	1
79	0843	Hamlet - Juvenile	10	1	12.5	1	0	0
80	0047	Beaugregory	10	2	12.5	2	0	0
81	0185	Tobaccofish	10	1	12.5	1	0	0
82	0050	Dusky Damselfish	10	2	12.5	2	0	0
83	0120	Blue Hamlet	10	1	12.5	1	0	0
84	0112	Sailors Choice	10	1	0	0	50	1
85	0179	Chalk Bass	10	1	12.5	1	0	0
86	0142	Cero	10	2	12.5	2	0	0
87	0051	Longfin Damselfish	10	1	12.5	1	0	0
88	0218	Slippery Dick	10	1	0	0	50	1
89	0203	Squirrelfish	10	1	12.5	1	0	0

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Geographic Zone Report

Region:

Tropical Western Atlantic ▾

Geographic Zone:

Marker 32 (Toppino Buoy) Shallow (34080023)

Start Date:

Jul ▾ 6 ▾ 2015 ▾

End Date:

Jul ▾ 6 ▾ 2015 ▾

Species Display: Show:

Table (Classic) ▾

Common names ▾

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Survey Type: SA = Species & Abundance; SO = Species Only?

Click on a geographic place name to expand its sub-zones, or on a numeric zone ID to include only sites under that ID

	Site	Surveys				Bottom Time
		Expert	Novice	SA	SO	
Code						(H:M)
<u>TWA</u>						
3	FLORIDA (East Coast and Keys)			8	0	2 0 9:37
34	KEYS (Key Largo to Key West, including Fla. Bay)	8	0	2	0	9:37
<u>3408</u>	Key West			8	0	2 0 9:37
<u>34080023</u>	Marker 32 (Toppino Buoy) Shallow			8	0	2 0 9:37
TOTALS				8	0	2 0 9:37

Species

Rank	SP#	Common Name	Total		Expert		Novice	
			SF%	DEN	SF%	DEN	SF%	DEN
1	0150	Queen Parrotfish	100	2.3	100	2.3	100	2.5
2	0133	Bar Jack	100	3.2	100	3	100	4
3	0130	Hogfish	100	1.5	100	1.5	100	1.5
4	0152	Redband Parrotfish	100	2.7	100	2.6	100	3
5	0054	Yellowtail Damselfish	100	2.3	100	2.3	100	2.5
6	0167	Sharpnose Puffer	100	1.9	100	1.9	100	2
7	0052	Sergeant Major	100	3.6	100	3.5	100	4
8	0077	Yellow Goatfish	100	2.9	100	2.9	100	3
9	0117	White Grunt	100	2	100	2	100	2
10	0083	Masked Goby/Glass Goby	100	3	100	3	100	3
11	0106	Caesar Grunt	100	2.8	100	2.8	100	3
12	0105	Bluestriped Grunt	100	3.1	100	3	100	3.5
13	0108	French Grunt	100	3.5	100	3.4	100	4
14	0111	Porkfish	100	2.1	100	2	100	2.5
15	0079	Bridled Goby Complex (Bridled/Sand-Canyon/Patch-Reef)	100	1.6	100	1.6	100	1.5
16	0112	Sailors Choice	100	1.6	100	1.6	100	1.5
17	0048	Bicolor Damselfish	100	3.4	100	3.4	100	3.5
18	0192	Gray Snapper	100	3	100	2.9	100	3.5
19	0031	Foureye Butterflyfish	100	2.1	100	2	100	2.5
20	0215	Creole Wrasse	100	2.6	100	2.6	100	2.5
21	0034	Spotfin Butterflyfish	100	2	100	2	100	2
22	0203	Squirrelfish	100	2.2	100	2.3	100	2
23	0204	Blue Tang	100	2.7	100	2.5	100	3.5
24	0213	Bluehead	100	3.7	100	3.6	100	4
25	0206	Ocean Surgeonfish	100	3	100	3	100	3
26	0042	Blue Chromis	100	2.1	100	2.1	100	2
27	0216	Puddingwife	100	2.4	100	2.3	100	3
28	0196	Schoolmaster	100	3	100	2.9	100	3.5
29	0239	Trumpetfish	100	1.8	100	1.8	100	2

30	0197	Yellowtail Snapper	100	3.3	100	3.3	100	3.5
31	0043	Brown Chromis	100	3.5	100	3.5	100	3.5
32	0218	Slippery Dick	100	2.9	100	2.9	100	3
33	0220	Yellowhead Wrasse	100	3.3	100	3.4	100	3
34	0214	Clown Wrasse	100	2.5	100	2.8	100	1.5
35	0147	Greenblotch Parrotfish	90	2.2	100	2.3	50	2
36	0095	Graysby	90	2	100	2	50	2
37	0156	Striped Parrotfish	90	2.7	100	2.6	50	3
38	0155	Stoplight Parrotfish	90	2.6	100	2.6	50	2
39	0154	Redtail Parrotfish	90	1.8	100	1.9	50	1
40	0194	Mahogany Snapper	90	2.3	100	2.3	50	3
41	0131	Spanish Hogfish	90	1.8	87.5	1.7	100	2
42	0006	Rock Beauty	90	1.6	87.5	1.6	100	1.5
43	0050	Dusky Damselfish	90	1.9	87.5	1.9	100	2
44	0153	Yellowtail (Redfin) Parrotfish	80	1.5	75	1.7	100	1
45	0114	Spanish Grunt	80	1.6	75	1.5	100	2
46	0160	Saucereye Porgy	80	1.8	87.5	1.6	50	3
47	0199	Dusky Squirrelfish	80	1.9	100	1.9	0	0
48	0201	Longspine Squirrelfish	80	2.5	87.5	2.6	50	2
49	0113	Smallmouth Grunt	80	3	100	3	0	0
50	0049	Cocoa Damselfish	80	1.6	87.5	1.7	50	1
51	0081	Goldspot Goby	80	1.8	87.5	1.7	50	2
52	0069	Orangespotted Filefish	70	1.1	87.5	1.1	0	0
53	0030	Banded Butterflyfish	70	2	75	2	50	2
54	0181	Harlequin Bass	70	1.6	75	1.7	50	1
55	0221	Bermuda Chub/Gray Chub	70	3.1	62.5	3	100	3.5
56	0149	Princess Parrotfish	70	2.1	62.5	2	100	2.5
57	0076	Spotted Goatfish	70	1.6	75	1.5	50	2
58	0019	Saddled Blenny	60	1.5	50	1.3	100	2
59	0056	Highhat	60	2.5	50	2.8	100	2
60	0502	Silver Porgy	60	2	62.5	2	50	2
61	0100	Rock Hind	60	1.5	50	1.3	100	2
62	0003	French Angelfish	60	1	62.5	1	50	1
63	0005	Queen Angelfish	60	1.7	62.5	1.6	50	2

64	0202	Reef Squirrelfish	50	2	37.5	1.7	100	2.5
65	0080	Colon Goby	50	1.2	62.5	1.2	0	0
66	0336	Roughhead Blenny	50	1.4	50	1.5	50	1
67	0047	Beaugregory	50	1.4	37.5	1.7	100	1
68	0051	Longfin Damselfish	50	1.4	50	1.5	50	1
69	0236	Glassy Sweeper	50	2.4	62.5	2.4	0	0
70	0198	Blackbar Soldierfish	40	1.8	50	1.8	0	0
71	0028	Spotted Trunkfish	40	1	50	1	0	0
72	0017	Redlip Blenny	40	1.8	50	1.8	0	0
73	0026	Scrawled Cowfish	40	1.5	25	1.5	100	1.5
74	0226	Redspotted Hawkfish	40	1.3	50	1.3	0	0
75	0084	Neon Goby	40	2.8	25	2.5	100	3
76	0027	Smooth Trunkfish	30	1	25	1	50	1
77	0497	Knobbed Porgy	30	1	37.5	1	0	0
78	0178	Spotted Scorpionfish	30	1	37.5	1	0	0
79	0943	Brassy Chub	30	3.3	37.5	3.3	0	0
80	0004	Gray Angelfish	20	1	25	1	0	0
81	0070	Scrawled Filefish	20	1	25	1	0	0
82	0007	Great Barracuda	20	1	25	1	0	0
83	0145	Bluelip Parrotfish	20	2	25	2	0	0
84	0139	Permit	20	1	25	1	0	0
85	0091	Black Grouper	20	1	25	1	0	0
86	0205	Doctorfish	20	1	25	1	0	0
87	0501	Spottail Pinfish	20	1	25	1	0	0
88	0109	Black Margate	20	1.5	25	1.5	0	0
89	0462	Banded Jawfish	20	1	25	1	0	0
90	0930	Topsail Chub	20	2	25	2	0	0
91	0116	Tomtate	10	3	0	0	50	3
92	0234	Greater Soapfish	10	1	12.5	1	0	0
93	0072	Whitespotted Filefish	10	1	0	0	50	1
94	0238	Sand Tilefish	10	1	12.5	1	0	0
95	0078	Blue Dartfish (Blue Goby)	10	2	12.5	2	0	0
96	0471	Red Lizardfish	10	1	12.5	1	0	0
97	0231	Sharksucker	10	1	12.5	1	0	0

98	0097	Nassau Grouper	10	1	12.5	1	0	0
99	0158	Littlehead Porgy	10	1	12.5	1	0	0
100	0086	Pallid Goby	10	2	12.5	2	0	0
101	0082	Hovering Dartfish (Hovering Goby)	10	2	12.5	2	0	0
102	0044	Purple Reeffish	10	1	12.5	1	0	0
103	0185	Tobaccofish	10	1	0	0	50	1
104	0059	Spotted Drum	10	2	12.5	2	0	0
105	0062	Goldentail Moray	10	1	12.5	1	0	0
106	0219	Yellowcheek Wrasse	10	1	12.5	1	0	0
107	0144	Blue Parrotfish	10	1	0	0	50	1
108	0217	Rainbow Wrasse	10	1	12.5	1	0	0
109	0071	Slender Filefish	10	1	12.5	1	0	0
110	0151	Rainbow Parrotfish	10	2	12.5	2	0	0
111	0230	Sand Diver	10	1	12.5	1	0	0

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Geographic Zone Report

Region:

Geographic Zone:

Vandenberg (Hoyt Vandenberg Artificial Reef) (34080097)

Start Date:

End Date:

Species Display: Show:

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Survey Type: SA = Species & Abundance; SO = Species Only?

Click on a geographic place name to expand its sub-zones, or on a numeric zone ID to include only sites under that ID

	Code	Site	Surveys				Bottom Time (H:M)
			Expert	Novice	SA	SO	

TWA

3	FLORIDA (East Coast and Keys)	8	0	4	0	5:58
34	KEYS (Key Largo to Key West, including Fla. Bay)	8	0	4	0	5:58
3408	Key West	8	0	4	0	5:58
<u>34080097</u>	Vandenberg (Hoyt Vandenberg Artificial Reef)	8	0	4	0	5:58
	TOTALS	8	0	4	0	5:58

Species

Rank	SP#	Common Name	Total		Expert		Novice	
			SF%	DEN	SF%	DEN	SF%	DEN
1	0167	Sharpnose Puffer	100	3.1	100	3	100	3.3
2	0048	Bicolor Damselfish	100	3.1	100	3.3	100	2.8
3	0204	Blue Tang	91.7	2.1	100	2.1	75	2
4	0131	Spanish Hogfish	91.7	1.9	100	1.9	75	2
5	0213	Bluehead	91.7	3.5	100	3.6	75	3
6	0197	Yellowtail Snapper	91.7	2.8	100	2.8	75	3
7	0044	Purple Reeffish	83.3	3.6	100	3.6	50	3.5
8	0045	Sunshinefish	83.3	2.8	100	2.9	50	2.5
9	0152	Redband Parrotfish	83.3	2.5	100	2.5	50	2.5
10	0003	French Angelfish	83.3	1.6	87.5	1.7	75	1.3
11	0133	Bar Jack	83.3	2.5	100	2.6	50	2
12	0132	Spotfin Hogfish	83.3	2.4	100	2.3	50	3
13	0111	Porkfish	83.3	1.3	87.5	1.3	75	1.3
14	0006	Rock Beauty	83.3	1.6	100	1.8	50	1
15	0156	Striped Parrotfish	83.3	1.9	100	1.9	50	2
16	0005	Queen Angelfish	83.3	1.8	100	1.9	50	1.5
17	0033	Reef Butterflyfish	83.3	2.2	87.5	2.3	75	2
18	0220	Yellowhead Wrasse	75	2	87.5	2	50	2
19	0052	Sergeant Major	75	2	100	2	25	2
20	0007	Great Barracuda	75	1.9	100	2	25	1
21	0095	Graysby	75	2	100	2	25	2
22	0180	Creole-fish	75	2.4	100	2.5	25	2
23	0043	Brown Chromis	66.7	2.1	87.5	2.1	25	2
24	0215	Creole Wrasse	66.7	2.9	75	3	50	2.5
25	0206	Ocean Surgeonfish	66.7	2	75	2.2	50	1.5
26	0034	Spotfin Butterflyfish	66.7	1.6	75	1.8	50	1
27	0105	Bluestriped Grunt	66.7	1.4	87.5	1.4	25	1
28	0192	Gray Snapper	66.7	2	100	2	0	0

Geographic Zone Report

29	0001	Blue Angelfish	58.3	1.4	62.5	1.4	50	1.5
30	0181	Harlequin Bass	58.3	1.1	75	1.2	25	1
31	0115	Striped Grunt	58.3	3	87.5	3	0	0
32	0069	Orangespotted Filefish	58.3	1.9	75	2	25	1
33	0083	Masked Goby/Glass Goby	58.3	2.9	87.5	2.9	0	0
34	0004	Gray Angelfish	58.3	1.3	87.5	1.3	0	0
35	0239	Trumpetfish	50	1.2	50	1	50	1.5
36	0539	School Bass	50	2.5	75	2.5	0	0
37	0151	Rainbow Parrotfish	41.7	1.6	37.5	1.7	50	1.5
38	0002	Cherubfish	41.7	1	50	1	25	1
39	0093	Coney	41.7	1.4	50	1.3	25	2
40	0042	Blue Chromis	33.3	3.3	12.5	4	75	3
41	0148	Midnight Parrotfish	33.3	1	50	1	0	0
42	0081	Goldspot Goby	33.3	1.3	50	1.3	0	0
43	0076	Spotted Goatfish	25	1.3	25	1.5	25	1
44	0117	White Grunt	16.7	1	12.5	1	25	1
45	0194	Mahogany Snapper	16.7	2	0	0	50	2
46	0683	Red Lionfish (exotic)	16.7	1	25	1	0	0
47	0021	Seaweed Blenny	16.7	1	25	1	0	0
48	0233	Common Snook	16.7	1	25	1	0	0
49	0205	Doctorfish	16.7	1.5	25	1.5	0	0
50	0226	Redspotted Hawkfish	16.7	1.5	25	1.5	0	0
51	0147	Greenblotch Parrotfish	16.7	2	25	2	0	0
52	0028	Spotted Trunkfish	16.7	1	25	1	0	0
53	0149	Princess Parrotfish	16.7	1.5	12.5	2	25	1
54	0185	Tobaccofish	16.7	1	25	1	0	0
55	0217	Rainbow Wrasse	8.3	1	0	0	25	1
56	0231	Sharksucker	8.3	1	12.5	1	0	0
57	0214	Clown Wrasse	8.3	2	0	0	25	2
58	0024	Bonnetmouth	8.3	3	12.5	3	0	0
59	0178	Spotted Scorpionfish	8.3	1	12.5	1	0	0
60	0121	Butter Hamlet	8.3	1	12.5	1	0	0
61	0130	Hogfish	8.3	1	12.5	1	0	0
62	0086	Pallid Goby	8.3	1	12.5	1	0	0

Geographic Zone Report

63	0108	French Grunt	8.3	2	12.5	2	0	0
64	0106	Caesar Grunt	8.3	1	0	0	25	1
65	0134	Blue Runner	8.3	1	0	0	25	1
66	0155	Stoplight Parrotfish	8.3	2	12.5	2	0	0
67	0050	Dusky Damselfish	8.3	2	0	0	25	2
68	0046	Yellowtail Reeffish	8.3	2	12.5	2	0	0
69	0099	Red Hind	8.3	1	12.5	1	0	0
70	0053	Threespot Damselfish	8.3	1	12.5	1	0	0
71	0054	Yellowtail Damselfish	8.3	2	0	0	25	2
72	0031	Foureye Butterflyfish	8.3	2	0	0	25	2

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Geographic Zone Report

Region:

Geographic Zone:

Western Sambos Deep (HV monitoring site) (34080094)

Start Date:

End Date:

Species Display: Show:

[Change](#)

[Reset report options](#)

Survey Type: SA = Species & Abundance; SO = Species Only?

Click on a geographic place name to expand its sub-zones, or on a numeric zone ID to include only sites under that ID

	Code	Site	Surveys				Bottom Time (H:M)
			Expert	Novice	SA	SO	

TWA

3	FLORIDA (East Coast and Keys)	9	0	0	0	4:30
34	KEYS (Key Largo to Key West, including Fla. Bay)	9	0	0	0	4:30
3408	Key West	9	0	0	0	4:30
34080094	Western Sambos Deep (HV monitoring site)	9	0	0	0	4:30
	TOTALS	9	0	0	0	4:30

Species

Rank	SP#	Common Name	Total		Expert		Novice	
			SF%	DEN	SF%	DEN	SF%	DEN
1	0155	Stoplight Parrotfish	100	2	100	2	0	0
2	0095	Graysby	100	1.9	100	1.9	0	0
3	0048	Bicolor Damselfish	100	3	100	3	0	0
4	0154	Redtail Parrotfish	100	1.7	100	1.7	0	0
5	0045	Sunshinefish	100	2.4	100	2.4	0	0
6	0105	Bluestriped Grunt	100	2.2	100	2.2	0	0
7	0052	Sergeant Major	100	2.3	100	2.3	0	0
8	0156	Striped Parrotfish	100	2.9	100	2.9	0	0
9	0167	Sharpnose Puffer	100	2	100	2	0	0
10	0077	Yellow Goatfish	100	2	100	2	0	0
11	0196	Schoolmaster	100	2.2	100	2.2	0	0
12	0083	Masked Goby/Glass Goby	100	4	100	4	0	0
13	0201	Longspine Squirrelfish	100	1.7	100	1.7	0	0
14	0197	Yellowtail Snapper	100	2.7	100	2.7	0	0
15	0193	Lane Snapper	100	2.4	100	2.4	0	0
16	0044	Purple Reeffish	100	3.9	100	3.9	0	0
17	0117	White Grunt	100	2.7	100	2.7	0	0
18	0213	Bluehead	100	3.1	100	3.1	0	0
19	0121	Butter Hamlet	100	2.1	100	2.1	0	0
20	0006	Rock Beauty	100	2.4	100	2.4	0	0
21	0005	Queen Angelfish	100	1.7	100	1.7	0	0
22	0220	Yellowhead Wrasse	100	2.2	100	2.2	0	0
23	0215	Creole Wrasse	100	3	100	3	0	0
24	0152	Redband Parrotfish	100	2.6	100	2.6	0	0
25	0108	French Grunt	100	2.7	100	2.7	0	0
26	0149	Princess Parrotfish	100	1.9	100	1.9	0	0
27	0131	Spanish Hogfish	100	1.9	100	1.9	0	0
28	0192	Gray Snapper	88.9	2.1	88.9	2.1	0	0

29	0116	Tomtate	88.9	2.9	88.9	2.9	0	0
30	0111	Porkfish	88.9	2	88.9	2	0	0
31	0130	Hogfish	88.9	1.8	88.9	1.8	0	0
32	0076	Spotted Goatfish	88.9	1.8	88.9	1.8	0	0
33	0042	Blue Chromis	88.9	2.3	88.9	2.3	0	0
34	0033	Reef Butterflyfish	88.9	1.9	88.9	1.9	0	0
35	0031	Foureye Butterflyfish	88.9	1.9	88.9	1.9	0	0
36	0339	Wrasse Blenny	88.9	1.6	88.9	1.6	0	0
37	0204	Blue Tang	88.9	1.9	88.9	1.9	0	0
38	0206	Ocean Surgeonfish	88.9	1.9	88.9	1.9	0	0
39	0133	Bar Jack	88.9	2.3	88.9	2.3	0	0
40	0239	Trumpetfish	77.8	1.6	77.8	1.6	0	0
41	0034	Spotfin Butterflyfish	77.8	2	77.8	2	0	0
42	0100	Rock Hind	77.8	1.6	77.8	1.6	0	0
43	0112	Sailors Choice	77.8	1.6	77.8	1.6	0	0
44	0079	Bridled Goby Complex (Bridled/Sand-Canyon/Patch-Reef)	77.8	1.7	77.8	1.7	0	0
45	0091	Black Grouper	77.8	1.1	77.8	1.1	0	0
46	0160	Saucereye Porgy	66.7	1	66.7	1	0	0
47	0194	Mahogany Snapper	66.7	2	66.7	2	0	0
48	0003	French Angelfish	66.7	1.3	66.7	1.3	0	0
49	0053	Threespot Damselfish	66.7	1.7	66.7	1.7	0	0
50	0132	Spotfin Hogfish	55.6	1.6	55.6	1.6	0	0
51	0147	Greenblotch Parrotfish	55.6	1.8	55.6	1.8	0	0
52	0058	Reef Croaker	55.6	1	55.6	1	0	0
53	0049	Cocoa Damselfish	55.6	1.4	55.6	1.4	0	0
54	0683	Red Lionfish (exotic)	44.4	1.3	44.4	1.3	0	0
55	0195	Mutton Snapper	44.4	1.8	44.4	1.8	0	0
56	0205	Doctorfish	44.4	2.3	44.4	2.3	0	0
57	0153	Yellowtail (Redfin) Parrotfish	44.4	1.5	44.4	1.5	0	0
58	0144	Blue Parrotfish	44.4	1	44.4	1	0	0
59	0141	Yellow Jack	44.4	1.8	44.4	1.8	0	0
60	0221	Bermuda Chub/Gray Chub	44.4	2	44.4	2	0	0
61	0114	Spanish Grunt	44.4	1	44.4	1	0	0

62	0047	Beaugregory	44.4	1.3	44.4	1.3	0	0
63	0084	Neon Goby	44.4	1.5	44.4	1.5	0	0
64	0086	Pallid Goby	44.4	1.3	44.4	1.3	0	0
65	0004	Gray Angelfish	44.4	1	44.4	1	0	0
66	0007	Great Barracuda	44.4	1.3	44.4	1.3	0	0
67	0001	Blue Angelfish	44.4	1.5	44.4	1.5	0	0
68	0070	Scrawled Filefish	33.3	1	33.3	1	0	0
69	0078	Blue Dartfish (Blue Goby)	33.3	1.7	33.3	1.7	0	0
70	0523	Whitefin Sharksucker	33.3	1	33.3	1	0	0
71	0230	Sand Diver	33.3	1	33.3	1	0	0
72	0046	Yellowtail Reeffish	33.3	1	33.3	1	0	0
73	0096	Goliath Grouper (Jewfish)	33.3	1	33.3	1	0	0
74	0110	White Margate	33.3	1.3	33.3	1.3	0	0
75	0943	Brassy Chub	33.3	1.7	33.3	1.7	0	0
76	0109	Black Margate	33.3	1	33.3	1	0	0
77	0106	Caesar Grunt	33.3	1.3	33.3	1.3	0	0
78	0461	Round Scad	33.3	3.3	33.3	3.3	0	0
79	0043	Brown Chromis	22.2	1.5	22.2	1.5	0	0
80	0539	School Bass	22.2	3	22.2	3	0	0
81	0051	Longfin Damselfish	22.2	1	22.2	1	0	0
82	0181	Harlequin Bass	22.2	1.5	22.2	1.5	0	0
83	0099	Red Hind	22.2	1	22.2	1	0	0
84	0150	Queen Parrotfish	22.2	1	22.2	1	0	0
85	0098	Red Grouper	22.2	1	22.2	1	0	0
86	0843	Hamlet - Juvenile	22.2	1	22.2	1	0	0
87	0081	Goldspot Goby	22.2	1	22.2	1	0	0
88	0497	Knobbed Porgy	11.1	1	11.1	1	0	0
89	0024	Bonnetmouth	11.1	2	11.1	2	0	0
90	0471	Red Lizardfish	11.1	1	11.1	1	0	0
91	0792	Juvenile Grunt	11.1	3	11.1	3	0	0
92	0592	Townsend Angelfish (Hybrid Queen/Blue)	11.1	1	11.1	1	0	0
93	0054	Yellowtail Damselfish	11.1	1	11.1	1	0	0
94	0179	Chalk Bass	11.1	2	11.1	2	0	0

95	0080	Colon Goby	11.1	2	11.1	2	0	0
96	0082	Hovering Dartfish (Hovering Goby)	11.1	1	11.1	1	0	0
97	0158	Littlehead Porgy	11.1	1	11.1	1	0	0
98	0145	Bluelip Parrotfish	11.1	2	11.1	2	0	0
99	0059	Spotted Drum	11.1	1	11.1	1	0	0
100	0056	Highhat	11.1	1	11.1	1	0	0
101	0027	Smooth Trunkfish	11.1	1	11.1	1	0	0
102	0026	Scrawled Cowfish	11.1	1	11.1	1	0	0
103	0218	Slippery Dick	11.1	2	11.1	2	0	0
104	0030	Banded Butterflyfish	11.1	1	11.1	1	0	0
105	0115	Striped Grunt	11.1	2	11.1	2	0	0
106	0226	Redspotted Hawkfish	11.1	1	11.1	1	0	0

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Geographic Zone Report

Region:

Tropical Western Atlantic ▾

Geographic Zone:

Western Sambo (34080001)

Start Date:

Jul ▾ 9 ▾ 2015 ▾

End Date:

Jul ▾ 9 ▾ 2015 ▾

Species Display: Show:

Table (Classic) ▾

Common names ▾

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Survey Type: SA = Species & Abundance; SO = Species Only?

Click on a geographic place name to expand its sub-zones, or on a numeric zone ID to include only sites under that ID

	Site	Surveys				Bottom Time
		Expert	Novice	SA	SO	
Code						(H:M)
<u>TWA</u>						
3	FLORIDA (East Coast and Keys)			9	0	0:00
34	KEYS (Key Largo to Key West, including Fla. Bay)	9	0	0	0	9:00
<u>3408</u>	Key West	9	0	0	0	9:00
<u>34080001</u>	Western Sambo	9	0	0	0	9:00
TOTALS		9	0	0	0	9:0

Species

Rank	SP#	Common Name	Total		Expert		Novice	
			SF%	DEN	SF%	DEN	SF%	DEN
1	0117	White Grunt	100	2.2	100	2.2	0	0
2	0111	Porkfish	100	1.9	100	1.9	0	0
3	0131	Spanish Hogfish	100	1.8	100	1.8	0	0
4	0149	Princess Parrotfish	100	2.1	100	2.1	0	0
5	0152	Redband Parrotfish	100	2.8	100	2.8	0	0
6	0150	Queen Parrotfish	100	2	100	2	0	0
7	0106	Caesar Grunt	100	2.6	100	2.6	0	0
8	0095	Graysby	100	2	100	2	0	0
9	0080	Colon Goby	100	1.7	100	1.7	0	0
10	0079	Bridled Goby Complex (Bridled/Sand-Canyon/Patch-Reef)	100	2.4	100	2.4	0	0
11	0081	Goldspot Goby	100	2.3	100	2.3	0	0
12	0083	Masked Goby/Glass Goby	100	3.4	100	3.4	0	0
13	0084	Neon Goby	100	2.1	100	2.1	0	0
14	0155	Stoplight Parrotfish	100	2.3	100	2.3	0	0
15	0156	Striped Parrotfish	100	2.9	100	2.9	0	0
16	0213	Bluehead	100	3.6	100	3.6	0	0
17	0206	Ocean Surgeonfish	100	2.7	100	2.7	0	0
18	0214	Clown Wrasse	100	2.4	100	2.4	0	0
19	0215	Creole Wrasse	100	3.4	100	3.4	0	0
20	0220	Yellowhead Wrasse	100	2.8	100	2.8	0	0
21	0218	Slippery Dick	100	2.9	100	2.9	0	0
22	0204	Blue Tang	100	2.7	100	2.7	0	0
23	0201	Longspine Squirrelfish	100	2.1	100	2.1	0	0
24	0192	Gray Snapper	100	3.1	100	3.1	0	0
25	0167	Sharpnose Puffer	100	2	100	2	0	0
26	0194	Mahogany Snapper	100	2.2	100	2.2	0	0
27	0196	Schoolmaster	100	2.7	100	2.7	0	0
28	0197	Yellowtail Snapper	100	3.4	100	3.4	0	0
29	0077	Yellow Goatfish	100	2.2	100	2.2	0	0
30	0105	Bluestriped Grunt	100	2.7	100	2.7	0	0

31	0043	Brown Chromis	100	2.9	100	2.9	0	0
32	0048	Bicolor Damselfish	100	3.3	100	3.3	0	0
33	0042	Blue Chromis	100	2.4	100	2.4	0	0
34	0031	Foureye Butterflyfish	100	1.9	100	1.9	0	0
35	0007	Great Barracuda	100	2.1	100	2.1	0	0
36	0052	Sergeant Major	100	3.2	100	3.2	0	0
37	0044	Purple Reeffish	100	2.6	100	2.6	0	0
38	0054	Yellowtail Damselfish	100	1.9	100	1.9	0	0
39	0034	Spotfin Butterflyfish	88.9	1.9	88.9	1.9	0	0
40	0154	Redtail Parrotfish	88.9	1.6	88.9	1.6	0	0
41	0108	French Grunt	88.9	2.8	88.9	2.8	0	0
42	0130	Hogfish	88.9	1.6	88.9	1.6	0	0
43	0133	Bar Jack	88.9	1.8	88.9	1.8	0	0
44	0181	Harlequin Bass	88.9	1.8	88.9	1.8	0	0
45	0053	Threespot Damselfish	88.9	2.3	88.9	2.3	0	0
46	0006	Rock Beauty	88.9	1.6	88.9	1.6	0	0
47	0228	Yellowhead Jawfish	88.9	1.9	88.9	1.9	0	0
48	0049	Cocoa Damselfish	88.9	1.8	88.9	1.8	0	0
49	0003	French Angelfish	88.9	1.3	88.9	1.3	0	0
50	0216	Puddingwife	77.8	1.7	77.8	1.7	0	0
51	0153	Yellowtail (Redfin) Parrotfish	77.8	1.7	77.8	1.7	0	0
52	0425	Leopard Goby	77.8	1.4	77.8	1.4	0	0
53	0070	Scrawled Filefish	77.8	1.3	77.8	1.3	0	0
54	0114	Spanish Grunt	77.8	2	77.8	2	0	0
55	0050	Dusky Damselfish	77.8	1.9	77.8	1.9	0	0
56	0051	Longfin Damselfish	77.8	1.7	77.8	1.7	0	0
57	0144	Blue Parrotfish	77.8	1.4	77.8	1.4	0	0
58	0086	Pallid Goby	66.7	1.8	66.7	1.8	0	0
59	0160	Saucereye Porgy	66.7	1.5	66.7	1.5	0	0
60	0191	Dog Snapper	66.7	1.3	66.7	1.3	0	0
61	0121	Butter Hamlet	66.7	1.3	66.7	1.3	0	0
62	0226	Redspotted Hawkfish	66.7	1	66.7	1	0	0
63	0030	Banded Butterflyfish	66.7	2	66.7	2	0	0
64	0238	Sand Tilefish	66.7	1	66.7	1	0	0

65	0205	Doctorfish	66.7	1.3	66.7	1.3	0	0
66	0151	Rainbow Parrotfish	66.7	1	66.7	1	0	0
67	0221	Bermuda Chub/Gray Chub	66.7	2.2	66.7	2.2	0	0
68	0059	Spotted Drum	55.6	1	55.6	1	0	0
69	0005	Queen Angelfish	55.6	1.4	55.6	1.4	0	0
70	0239	Trumpetfish	55.6	1.4	55.6	1.4	0	0
71	0157	Jolthead Porgy	44.4	1.8	44.4	1.8	0	0
72	0656	Hawksbill Sea Turtle	44.4	1	44.4	1	0	0
73	0943	Brassy Chub	44.4	2	44.4	2	0	0
74	0203	Squirrelfish	44.4	1.8	44.4	1.8	0	0
75	0027	Smooth Trunkfish	44.4	2	44.4	2	0	0
76	0182	Lantern Bass	44.4	1	44.4	1	0	0
77	0147	Greenblotch Parrotfish	44.4	1.5	44.4	1.5	0	0
78	0109	Black Margate	44.4	1	44.4	1	0	0
79	0113	Smallmouth Grunt	44.4	2.8	44.4	2.8	0	0
80	0112	Sailors Choice	44.4	1	44.4	1	0	0
81	0047	Beaugregory	44.4	1.3	44.4	1.3	0	0
82	0145	Bluelip Parrotfish	44.4	2	44.4	2	0	0
83	0091	Black Grouper	44.4	1.3	44.4	1.3	0	0
84	0148	Midnight Parrotfish	44.4	1.3	44.4	1.3	0	0
85	0076	Spotted Goatfish	44.4	1.5	44.4	1.5	0	0
86	0078	Blue Dartfish (Blue Goby)	33.3	1.3	33.3	1.3	0	0
87	0082	Hovering Dartfish (Hovering Goby)	33.3	2	33.3	2	0	0
88	0004	Gray Angelfish	33.3	1	33.3	1	0	0
89	0336	Roughhead Blenny	33.3	1.7	33.3	1.7	0	0
90	0069	Orangespotted Filefish	33.3	1	33.3	1	0	0
91	0930	Topsail Chub	33.3	1.7	33.3	1.7	0	0
92	0120	Blue Hamlet	33.3	1	33.3	1	0	0
93	0942	Smoothhead Glass Blenny Complex	33.3	1	33.3	1	0	0
94	0471	Red Lizardfish	33.3	1	33.3	1	0	0
95	0497	Knobbed Porgy	33.3	1	33.3	1	0	0
96	0039	Flamefish	33.3	1.3	33.3	1.3	0	0
97	0339	Wrasse Blenny	22.2	1.5	22.2	1.5	0	0

98	0523	Whitefin Sharksucker	22.2	1	22.2	1	0	0
99	0116	Tomtate	22.2	3	22.2	3	0	0
100	0097	Nassau Grouper	22.2	1	22.2	1	0	0
101	0001	Blue Angelfish	22.2	1	22.2	1	0	0
102	0036	Belted Cardinalfish	22.2	2	22.2	2	0	0
103	0100	Rock Hind	22.2	1	22.2	1	0	0
104	0019	Saddled Blenny	22.2	1	22.2	1	0	0
105	0017	Redlip Blenny	11.1	1	11.1	1	0	0
106	0033	Reef Butterflyfish	11.1	2	11.1	2	0	0
107	0622	Unidentified Triplefin species	11.1	1	11.1	1	0	0
108	0843	Hamlet - Juvenile	11.1	1	11.1	1	0	0
109	0028	Spotted Trunkfish	11.1	1	11.1	1	0	0
110	0021	Seaweed Blenny	11.1	1	11.1	1	0	0
111	0062	Goldentail Moray	11.1	1	11.1	1	0	0
112	0230	Sand Diver	11.1	1	11.1	1	0	0
113	0110	White Margate	11.1	1	11.1	1	0	0
114	0231	Sharksucker	11.1	1	11.1	1	0	0
115	0107	Cottonwick	11.1	3	11.1	3	0	0
116	0417	Bartail Goby	11.1	1	11.1	1	0	0
117	0099	Red Hind	11.1	1	11.1	1	0	0
118	0045	Sunshinefish	11.1	1	11.1	1	0	0

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Source URL: <http://www.reef.org/db/reports/geo/TWA/34080001/2015-07-09/2015-07-09/table/common>

Appendix 4.

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	4	10	10	10
48	Bicolor Damselfish	3	5	6	6
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang				
213	Bluehead	19	5	8	7
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse				
180	Creole-fish	1	18	18	18
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish	1	26	26	26
192	Gray Snapper	1	28	28	28
95	Graysby				
7	Great Barracuda	2	100	100	100
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Hightail				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrelfish				
457	Mackerel Scad				
	Masked Goby/Glass				
83	Goby	15	3	3	3
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish	1	18	18	18
149	Princess Parrotfish				

44	Purple Reeffish	16	2	5	3
5	Queen Angelfish				
150	Queen Parrotfish				
151	Rainbow Parrotfish				
99	Red Hind				
152	Redband Parrotfish	1	11	11	11
154	Redtail Parrotfish				
33	Reef Butterflyfish	2	10	10	10
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster				
26	Scrawled Cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major				
167	Sharpnose Puffer	8	4	6	6
218	Slippery Dick				
27	Smooth Trunk				
131	Spanish Hogfish				
34	Spotfin Butterflyfish				
132	Spotfin Hogfish	1	10	10	10
59	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish				
115	Striped Grunt	36	16	16	16
156	Striped Parrotfish				
45	Sunshinefish	2	7	7	7
185	Tobaccofish				
239	Trumpetfish				
117	White Grunt				
141	Yellow Jack				
219	Yellowcheek wrasse				
228	Yellowhead Jawfish				
220	Yellowhead Wrasse	2	10	8	9
54	Yellowtail Damselfish				
	Yellowtail (Redfin)				
153	Parrotfish				
197	Yellowtail Snapper				
	# Species	17			
	# Fish	115			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	2	21	21	21
48	Bicolor Damselfish	24	4	6	5
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	1	17	17	17
213	Bluehead	15	3	9	6
105	Bluestriped Grunt	21	19	24	22
23	Boga				
79	Bridled Goby	6	3	5	5
43	Brown Chromis				
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	28	15	19	17
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt	43	14	17	16
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby				
7	Great Barracuda	3	90	90	90
63	Green Moray	1	150	150	150
147	Greenblotch Parrotfish	1	6	6	6
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish	1	6	6	6
201	Longspine Squirrelfish				
457	Mackerel Scad				
	Masked Goby/Glass				
83	Goby	63	2	4	3
148	Midnight Parrotfish				
84	neon goby	1	4	4	4
206	Ocean Surgeonfish	1	16	16	16
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish	33	21	29	27
149	Princess Parrotfish	1	15	15	15

44	Purple Reeffish				
5	Queen Angelfish				
150	Queen Parrotfish	1	25	25	25
151	Rainbow Parrotfish				
99	Red Hind				
152	Redband Parrotfish				
154	Redtail Parrotfish				
33	Reef Butterflyfish				
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster	4	22	25	24
26	Scrawled Cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major	4	10	10	10
167	Sharpnose Puffer	1	5	5	5
218	slippery dick	1	7	7	7
27	Smooth Trunk				
131	Spanish Hogfish	1	18	18	18
34	Spotfin Butterflyfish				
132	Spotfin Hogfish				
59	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish				
115	Striped Grunt				
156	Striped Parrotfish	3	4	5	4
45	Sunshinefish				
185	tobaccofish	1	8	8	8
239	Trumpetfish				
117	White Grunt	1	23	23	23
141	Yellow Jack				
219	yellowcheek Wrasse				
228	Yellowhead Jawfish	3	9	9	9
220	Yellowhead Wrasse	5	7	10	9
54	Yellowtail Damselfish				
	Yellowtail (Redfin)				
153	Parrotfish				
197	Yellowtail Snapper	1	21	21	21
	# Species	29			
	# Fish	271			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	40	12	25	18
48	Bicolor Damselfish	38	2	7	4
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	2	15	21	18
213	Bluehead	50	5	12	7
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney	1	20	20	20
215	Creole Wrasse				
180	Creole-fish	4	8	10	9
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby	2	15	23	19
7	Great Barracuda	1	80	80	80
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrelfish				
457	Mackerel Scad				
	Masked Goby/Glass				
83	Goby				
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File	1	14	14	14
86	Pallid Goby				
111	Porkfish	1	25	25	25
149	Princess Parrotfish				

44	Purple Reeffish	13	1	4	2
5	Queen Angelfish				
150	Queen Parrotfish				
151	Rainbow Parrotfish	1	75	75	75
99	Red Hind				
152	Redband Parrotfish	4	16	24	20
154	Redtail Parrotfish				
33	Reef Butterflyfish	1	12	12	12
6	Rock Beauty	2	5	7	6
461	Round Scad				
196	Schoolmaster				
26	Scrawled Cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major				
167	Sharpnose Puffer	9	3	6	5
218	Slippery Dick				
27	Smooth Trunk				
131	Spanish Hogfish	2	14	24	18
34	Spotfin Butterflyfish				
132	Spotfin Hogfish				
76	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish				
115	Striped grunt	9	18	22	20
156	Striped Parrotfish				
45	Sunshinefish				
185	Tobaccofish				
239	Trumpetfish				
117	White Grunt				
141	Yellow Jack				
219	Yellowcheek wrasse				
228	Yellowhead Jawfish				
220	Yellowhead Wrasse	1	15	15	15
54	Yellowtail Damselfish				
	Yellowtail (Redfin)				
153	Parrotfish				
197	Yellowtail Snapper	12	20	25	22
	# Species	20			
	# Fish	194			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	2	25	30	27
48	Bicolor Damselfish	38	4	7	6
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang				
213	Bluehead	8	7	12	8
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby	2	5	7	6
43	Brown Chromis				
121	Butter Hamlet	1	12	12	12
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	2	15	20	17
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby	3	5	7	6
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby				
7	Great Barracuda				
63	Green Moray				
147	Greenblotch Parrotfish	2	7	10	8
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrelfish				
457	Mackerel Scad				
	Masked Goby/Glass				
83	Goby	165	2	5	3
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish	1	22	22	22
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish	2	20	25	23
149	Princess Parrotfish	2	8	16	12

44	Purple Reeffish				
5	Queen Angelfish	1	35	35	35
150	Queen Parrotfish				
151	Rainbow Parrotfish				
99	Red Hind				
152	Redband Parrotfish	2	12	17	15
154	Redtail Parrotfish				
33	Reef Butterflyfish				
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster				
26	Scrawled Cowfish				
70	Scrawled Filefish	2	45	50	48
21	Seaweed Blenny				
52	Sergeant Major	70	12	15	13
167	Sharpnose Puffer	2	5	7	6
218	Slippery Dick				
27	Smooth Trunk	1	18	18	18
131	Spanish Hogfish				
34	Spotfin Butterflyfish				
132	Spotfin Hogfish				
59	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish				
115	Striped Grunt				
156	Striped Parrotfish				
45	Sunshinefish				
185	Tobaccofish				
239	Trumpetfish				
117	White Grunt				
141	Yellow Jack				
219	Yellowcheek Wrasse	1	10	10	10
228	Yellowhead Jawfish				
220	Yellowhead Wrasse	5	7	12	10
54	Yellowtail Damselfish				
	Yellowtail (Redfin)				
153	Parrotfish				
197	Yellowtail Snapper	45	20	35	22
	# Species	21			
	# Fish	357			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	3	25	35	30
48	Bicolor Damselfish	13	3	6	4
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	2	15	17	16
213	Bluehead	22	3	11	6
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis	27	6	10	7
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	46	4	12	7
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby				
7	Great Barracuda				
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby				
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess Parrotfish				
44	Purple Reeffish	8	2	5	4

5	Queen Angelfish			
150	Queen Parrotfish			
151	Rainbow Parrotfish	1	50	50
99	Red hind			
152	Redband Parrotfish	5	8	25
154	Redtail Parrotfish			16
33	Reef Butterflyfish			
6	Rock Beauty	3	12	18
461	Round Scad			16
196	Schoolmaster			
26	Scrawled Cowfish			
70	Scrawled Filefish			
21	Seaweed Blenny			
52	Sergeant Major			
167	Sharpnose Puffer	8	3	6
218	Slippery Dick			5
27	Smooth Trunk			
131	Spanish Hogfish	3	8	22
34	Spotfin Butterflyfish	2	13	15
132	Spotfin Hogfish	2	9	10
59	Spotted Drum			9.5
76	Spotted Goatfish			
66	Spotted Moray			
178	Spotted Scorpionfish			
155	Stoplight Parrotfish			
115	Striped Grunt			
156	Striped Parrotfish	7	8	17
45	Sunshinefish	20	2	8
185	Tobaccofish			5
239	Trumpetfish			
117	White Grunt			
141	Yellow Jack			
219	Yellowcheek Wrasse			
228	Yellowhead Jawfish			
220	Yellowhead Wrasse			
54	Yellowtail Damselfish			
153	Yellowtail (Redfin) Parrotfish			
197	Yellowtail Snapper	2	28	30
				29
	# Species		17	
	# Fish		174	

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack				
48	Bicolor Damselfish	47	2	6	4
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	2	14	21	17
213	Bluehead	30	3	12	5
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet	2	10	11	10.5
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish	1	9	9	9
93	Coney				
215	Creole Wrasse				
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterfly	4	9	10	9.5
3	French Angel	1	35	35	35
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby	2	18	20	19
7	Great Barracuda	1	75	75	75
63	Green Moray				
147	Greenblotch Parrotfish	5	6	8	7
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby	200	1	4	3
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeon	5	15	19	17
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess parrot				
44	Purple reefish				

5	Queen Angel			
150	Queen Parrotfish			
151	Rainbow Parrotfish			
99	Red Hind			
152	Redband Parrotfish	3	9	23
154	Redtail Parrotfish			17
33	Reef Butterflyfish	2	11	12
6	Rock Beauty	1	17	17
461	Round Scad			
196	Schoolmaster			
26	Scrawled Cowfish	1	24	24
70	Scrawled Filefish			
21	Seaweed Blenny			
52	Sergeant Major	4	10	12
167	Sharpnose Puffer	3	4	8
218	Slippery Dick			6
27	Smooth Trunkfish			
131	Spanish Hogfish			
34	Spotfin Butterflyfish			
132	Spotfin Hogfish			
59	Spotted Drum			
76	spotted goatfish	1	21	21
66	Spotted Moray			
178	Spotted Scorpionfish			
155	Stoplight Parrotfish			
115	Striped Grunt			
156	Striped Parrotfish	8	3	18
45	Sunshinefish			10
185	Tobaccofish			
239	Trumpetfish			
117	White Grunt			
141	Yellow Jack			
219	Yellowcheek wrasse			
228	Yellowhead Jawfish			
220	Yellowhead Wrasse	4	4	13
54	Yellowtail Damselfish			7
153	Yellowtail (Redfin) Parrotfish			
197	Yellowtail Snapper	7	20	30
				25
	# Species	22		
	# Fish	334		

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	65	22	22	22
48	Bicolor Damselfish	10	3	7	5
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	5	20	25	22
213	Bluehead	90	5	8	7
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis	5	10	10	10
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse				
180	Creole-fish	46	12	25	22
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angel	1	35	35	35
192	Gray Snapper	1	35	35	35
95	Graysby	1	25	25	25
7	Great Baracuda	1	100	100	100
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby				
148	Midnight Parrotfish	1	50	50	50
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess Parrotfish				
44	Purple Reeffish				

5	Queen Angelfish			
150	Queen Parrotfish			
151	Rainbow Parrotfish			
99	Red hind			
152	Redband Parrotfish	1	25	25
154	Redtail Parrotfish			
33	Reef Butterflyfish			
6	Rock Beauty	1	12	12
461	Round Scad			
196	Schoolmaster			
26	Scrawled Cowfish			
70	Scrawled Filefish			
21	Seaweed Blenny			
52	Sergeant Major	1	15	15
167	Sharpnose Puffer	5	5	7
218	Slippery Dick			
27	Smooth Trunk			
131	Spanish Hogfish			
34	Spotfin Butterflyfish			
132	Spotfin Hogfish	1	20	20
59	Spotted Drum			
76	Spotted Goatfish			
66	Spotted Moray			
178	Spotted Scorpionfish	1	20	20
155	Stoplight Parrotfish			
115	Striped Grunt	24	20	20
156	Striped Parrotfish	3	15	25
45	Sunshinefish			
185	Tobaccofish			
239	Trumpetfish			
117	White Grunt			
141	Yellow Jack			
219	Yellowcheek Wrasse			
228	Yellowhead Jawfish			
220	Yellowhead Wrasse	1	15	15
54	Yellowtail Damselfish			
	Yellowtail (Redfin)			
153	Parrotfish			
197	Yellowtail Snapper	12	25	35
				30
	# Species	21		
	# Fish	276		

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	1	25	25	25
48	Bicolor Damselfish	22	4	6	5
91	Black Grouper	1	80	80	80
42	Blue Chromis	1	8	8	8
204	Blue Tang	1	25	25	25
213	Bluehead	9	5	10	8
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet	1	12	12	12
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	14	20	25	22
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish	2	10	10	10
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby	1	20	20	20
7	Great Barracuda	1	80	80	80
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrelfish				
457	Mackerel Scad				
	Masked Goby/Glass				
83	Goby	125	3	4	3.5
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish	1	20	20	20
69	Orangespotted File				
86	Pallid Goby	1	5	5	5
111	Porkfish	14	25	30	27
149	Princess Parrotfish	3	20	20	20

44	Purple Reeffish				
5	Queen Angelfish				
150	Queen Parrotfish				
151	Rainbow Parrotfish				
99	Red hind				
152	Redband Parrotfish	2	10	25	18.5
154	Redtail Parrotfish				
33	Reef Butterflyfish	1	15	15	15
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster	2	20	20	20
26	Scrawled Cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major	15	15	15	15
167	Sharpnose Puffer	1	7	7	7
218	Slippery Dick				
27	Smooth Trunk				
131	Spanish Hogfish				
34	Spotfin Butterflyfish				
132	Spotfin Hogfish				
59	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish	1	30	30	30
115	Striped Grunt				
156	Striped Parrotfish				
45	Sunshinefish				
185	Tobaccofish				
239	Trumpetfish				
117	White Grunt				
141	Yellow Jack				
219	Yellowcheeck Wrasse				
228	Yellowhead Jawfish				
220	Yellowhead Wrasse	2	10	12	11.25
54	Yellowtail Damselfish				
153	Yellowtail (Redfin) Parrotfish				
197	Yellowtail Snapper	200	20	30	25
	# Species	24			
	# Fish	422			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	3	15	45	20
48	Bicolor Damselfish	8	5	5	5
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	1	20	20	20
213	Bluehead	20	3	5	3
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	5	4	4	4
180	Creole-fish	1	15	15	15
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby				
7	Great Barracuda	1	70	70	70
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrelfish				
457	Mackerel Scad				
	Masked Goby/Glass				
83	Goby				
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess Parrotfish				

44	Purple Reeffish	15	2	5	4
5	Queen Angelfish	1	15	15	15
150	Queen Parrotfish				
151	Rainbow Parrotfish				
99	Red Hind				
152	Redband Parrotfish				
154	Redtail Parrotfish				
33	Reef Butterflyfish				
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster				
26	Scrawled Cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major				
167	Sharpnose Puffer	6	3	5	4
218	Slippery Dick				
27	Smooth Trunk				
131	Spanish Hogfish	1	7	7	7
34	Spotfin Butterflyfish				
132	Spotfin Hogfish	1	10	10	10
59	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish				
115	Striped Grunt	3	15	15	15
156	Striped Parrotfish				
45	Sunshinefish	5	5	5	5
185	Tobaccofish				
239	Trumpetfish	1	15	15	15
117	White Grunt				
141	Yellow jack				
219	Yellowcheek wrasse				
228	Yellowhead Jawfish				
220	Yellowhead Wrasse				
54	Yellowtail Damselfish				
	Yellowtail (Redfin)				
153	Parrotfish				
197	Yellowtail Snapper	1	15	15	15
	# Species	16			
	# Fish	73			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack				
48	Bicolor Damselfish	28	3	3	3
91	Black Grouper				
42	Blue Chromis	31	3	5	4
204	Blue Tang				
213	Bluehead	20	3	7	5
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet	1	8	8	8
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse				
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish	1	13	13	13
31	Foureye Butterfly	2	7	7	7
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby	1	7	7	7
7	Great Barracuda				
63	Green Moray				
147	Greenblotch Parrotfish	1	5	5	5
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby	70	2	3	2
148	Midnight Parrotfish				
84	Neon Goby	5	2	3	3
206	Ocean Surgeon	2	13	13	13
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess Parrotfish				
44	Purple reefish	10	2	2	2

5	Queen Angelfish			
150	Queen Parrotfish			
151	Rainbow Parrotfish			
99	Red hind			
152	Redband Parrotfish	2	10	15
154	Redtail Parrotfish			12
33	Reef Butterflyfish			
6	Rock Beauty			
461	Round Scad			
196	Schoolmaster			
26	Scrawled Cowfish			
70	Scrawled Filefish			
21	Seaweed Blenny			
52	Sergeant Major			
167	Sharpnose Puffer	1	3	3
218	Slippery Dick			
27	Smooth Trunk			
131	Spanish Hogfish			
34	Spotfin Butterflyfish			
132	Spotfin Hogfish			
59	Spotted Drum			
76	Spotted Goatfish			
66	Spotted Moray			
178	Spotted Scorpionfish			
155	Stoplight Parrotfish			
115	Striped Grunt			
156	Striped Parrotfish	1	15	15
45	Sunshinefish	2	2	2
185	Tobaccofish			
239	Trumpetfish			
117	White Grunt			
141	Yellow Jack			
219	Yellowcheeck Wrasse			
228	Yellowhead Jawfish			
220	Yellowhead Wrasse	2	5	10
54	Yellowtail Damselfish			7
153	Yellowtail (Redfin) Parrotfish			
197	Yellowtail Snapper	73	15	20
				18
				253
	# Species			
	# Fish			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	1	24	24	24
48	Bicolor Damselfish	23	4	10	8
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	1	14	14	14
213	Bluehead	43	5	12	8
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	7	6	16	10
180	Creole-fish	2	18	25	21
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper	1	30	30	30
95	Graysby				
7	Great Barracuda				
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby	14	2	5	3
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess Parrotfish				

44	Purple Reeffish	38	2	8	5
5	Queen Angelfish				
150	Queen Parrotfish				
151	Rainbow Parrotfish	1	55	55	55
99	Red Hind				
152	Redband Parrotfish	6	16	24	19
154	Redtail Parrotfish				
33	Reef Butterflyfish	2	12	12	12
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster				
26	Scrawled cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major	2	15	15	15
167	Sharpnose Puffer	8	6	10	8
218	Slippery Dick				
27	Smooth Trunk				
131	Spanish Hogfish	3	4	24	4
34	Spotfin Butterflyfish				
132	Spotfin Hogfish	2	8	8	8
59	Spotted Drum				
76	Spotted goatfish				
66	Spotted Moray	1	60	60	60
178	Spotted scorpionfish				
155	Stoplight Parrotfish				
115	Striped Grunt				
156	Striped Parrotfish				
45	Sunshinefish	8	5	9	7
185	Tobaccofish				
239	Trumpetfish	1	35	35	35
117	White Grunt				
141	Yellow jack				
219	Yellowcheek wrasse				
228	Yellowhead jawfish				
220	Yellowhead Wrasse	2	16	20	18
54	Yellowtail Damselfish				
153	Yellowtail (Redfin) Parrotfish				
197	Yellowtail Snapper	3	25	38	30
	# Species	21			
	# Fish	169			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	1	24	24	24
48	Bicolor Damselfish	32	4	7	6
91	Black Grouper				
42	Blue Chromis	2	12	12	12
204	Blue Tang	1	32	32	32
213	Bluehead	20	6	10	8
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis	1	11	11	11
121	Butter Hamlet	2	10	14	12
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	1	18	18	18
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish	2	9	11	10
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby	2	10	16	13
7	Great Barracuda				
63	Green Moray				
147	Greenblotch Parrotfish	2	4	6	5
843	Hamlet - Juvenile				
181	Harlequin Bass	2	9	9	9
56	Highhat				
130	Hogfish				
82	Hovering Dartifsh				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby	450	1	4	2
148	Midnight parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish	3	13	16	14
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess Parrotfish	2	28	30	29

44	Purple Reeffish			
5	Queen Angelfish			
150	Queen Parrotfish			
151	Rainbow Parrotfish			
99	Red hind			
152	Redband Parrotfish	8	6	24
154	Redtail Parrotfish			16
33	Reef Butterflyfish			
6	Rock Beauty			
461	Round Scad			
196	Schoolmaster			
26	Scrawled cowfish			
70	Scrawled Filefish			
21	Seaweed Blenny			
52	Sergeant Major			
167	Sharpnose Puffer	4	4	7
218	Slippery Dick			4
27	Smooth Trunk			
131	Spanish Hogfish			
34	Spotfin Butterflyfish	1	17	17
132	Spotfin Hogfish			17
59	Spotted Drum			
76	Spotted Goatfish			
66	Spotted moray			
178	Spotted Scorpionfish			
155	Stoplight Parrotfish			
115	Striped Grunt			
156	Striped Parrotfish	3	15	25
45	Sunshinefish	4	8	2
185	Tobaccofish			8
239	Trumpetfish			
117	White Grunt			
141	Yellow jack			
219	yellowcheek wrasse			
228	Yellowhead Jawfish			
220	Yellowhead Wrasse	6	6	12
54	Yellowtail Damselfish			9
153	Yellowtail (Redfin) Parrotfish			
197	Yellowtail Snapper	3	16	20
	# Species	22		18
	# Fish	552		

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack				
48	Bicolor Damselfish	1	5	5	5
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	1	15	15	15
213	Bluehead	19	4	13	9
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse				
180	Creole-fish	3	12	15	15
135	Crevalle Jack				
205	Doctorfish	1	18	18	18
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby				
7	Great Barracuda	1	70	70	70
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby				
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish	1	25	25	25
149	Princess Parrotfish				

44	Purple Reeffish	9	2	4	3
5	Queen Angelfish				
150	Queen Parrotfish				
151	Rainbow Parrotfish	2	65	75	70
99	Red Hind				
152	Redband Parrotfish	1	5	5	5
154	Redtail Parrotfish				
33	Reef Butterflyfish				
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster				
26	Scrawled cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major				
167	Sharpnose Puffer	9	3	9	4
218	Slippery Dick				
27	Smooth Trunk				
131	Spanish Hogfish				
34	Spotfin Butterflyfish				
132	Spotfin Hogfish	1	25	25	25
59	Spotted Drum				
76	Spotted goatfish				
66	Spotted Moray				
178	Spotted scorpionfish				
155	Stoplight Parrotfish				
115	Striped Grunt	22	13	20	15
156	Striped Parrotfish				
45	Sunshinefish	2	3	4	3.5
185	Tobaccofish				
239	Trumpetfish				
117	White Grunt				
141	Yellow jack				
219	Yellowcheek wrasse				
228	Yellowhead jawfish				
220	Yellowhead Wrasse	1	16	16	16
54	Yellowtail Damselfish				
153	Yellowtail (Redfin) Parrotfish				
197	Yellowtail Snapper	7	14	20	15
	# Species	16			
	# Fish	81			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	3	20	25	25
48	Bicolor Damselfish	54	2	6	4
91	Black Grouper				
42	Blue Chromis	4	3	8	3
204	Blue Tang	2	15	18	16.5
213	Bluehead	8	3	12	5
105	Bluestriped Grunt	7	20	30	25
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet	1	6	6	6
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	2	3	3	3
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish	1	8	8	8
3	French Angelfish				
108	French Grunt	15	13	25	20
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby				
7	Great Barracuda				
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass	1	6	6	6
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrelfish				
457	mackerel Scad				
	Masked Goby/Glass				
83	Goby	220	2	4	2
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish	3	15	20	15
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish	2	28	33	30.5
149	Princess Parrotfish	3	7	25	7

44	Purple Reeffish	17	2	3	2
5	Queen Angelfish	1	20	20	20
150	Queen Parrotfish				
151	Rainbow Parrotfish				
99	Red Hind				
152	Redband Parrotfish	5	5	17	7
154	Redtail Parrotfish				
33	Reef Butterflyfish				
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster				
26	Scrawled Cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major	18	7	11	8
167	Sharpnose Puffer	3	3	5	3
218	Slippery Dick				
27	Smooth Trunk				
131	Spanish Hogfish				
34	Spotfin Butterflyfish				
132	Spotfin Hogfish				
59	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish				
115	Striped Grunt				
156	Striped Parrotfish	3	10	12	10
45	Sunshinefish	2	2	3	2.5
185	Tobaccofish				
239	Trumpetfish	1	13	13	13
117	White Grunt				
141	Yellow Jack				
219	Yellowcheeck wrasse				
228	Yellowhead Jawfish				
220	Yellowhead Wrasse	1	6	6	6
54	Yellowtail Damselfish	1	8	8	8
	Yellowtail (Redfin)				
153	Parrotfish				
197	Yellowtail Snapper	3	20	25	20
	# Species	26			
	# Fish	381			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	14	14	28	23
48	Bicolor Damselfish	34	3	6	5
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang	4	13	18	16
213	Bluehead	79	4	11	8
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis	1	6	6	6
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse	68	6	17	9
180	Creole-fish	9	14	21	19
135	Crevalle Jack				
205	Doctorfish	1	21	21	21
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper	1	22	22	22
95	Graysby	1	19	19	19
7	Great Barracuda	2	75	106	90.5
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highhat				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrelfish				
457	mackerel scad				
	Masked Goby/Glass				
83	Goby				
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess Parrotfish				

44	Purple Reeffish	17	3	6	4
5	Queen Angelfish	2	26	28	27
150	Queen Parrotfish				
151	Rainbow Parrotfish				
99	Red hind				
152	Redband Parrotfish	2	13	14	13.5
154	Redtail Parrotfish				
33	Reef Butterflyfish				
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster				
26	Scrawled Cowfish				
70	Scrawled Filefish	1	47	47	47
21	Seaweed Blenny				
52	Sergeant Major				
167	Sharpnose Puffer	3	4	7	6
218	Slippery Dick				
27	Smooth Trunk				
131	Spanish Hogfish	1	19	19	19
34	Spotfin Butterflyfish	2	12	12	12
132	Spotfin Hogfish	1	12	12	12
59	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish				
115	Striped grunt	35	11	19	16
156	Striped Parrotfish	2	11	18	14.5
45	Sunshinefish	28	3	6	4
185	Tobaccofish				
239	Trumpetfish				
117	White Grunt				
141	Yellow Jack				
219	Yellowcheeck Wrasse				
228	Yellowhead Jawfish				
220	Yellowhead Wrasse				
54	Yellowtail Damselfish				
	Yellowtail (Redfin)				
153	Parrotfish				
197	Yellowtail Snapper	38	16	24	19
	# Species	23			
	# Fish	346			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish		1	8	8
133	Bar Jack		2	19	26
48	Bicolor Damselfish		38	2	4
91	Black Grouper				3
42	Blue Chromis		1	6	6
204	Blue Tang		1	16	16
213	Bluehead		19	4	10
105	Bluestriped Grunt		23	16	26
23	Boga				23
79	Bridled Goby		11	2	3
43	Brown Chromis				3
121	Butter Hamlet		1	8	8
142	Cero				8
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse				
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt		5	13	16
81	Goldspot Goby				15
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby		2	17	21
7	Great Barracuda				19
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highaht				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby		140	1	2
148	Midnight Parrotfish				2
84	Neon Goby				
206	Ocean Surgeonfish		4	14	16
69	Orangespotted File				15
86	Pallid Goby		1	3	3
111	Porkfish		2	22	24
149	Princess Parrotfish		2	7	18
44	Purple Reeffish		12	2	12.5
					3

5	Queen Angel	1	24	24	24
150	Queen Parrotfish				
151	Rainbow Parrotfish				
99	Red Hind				
152	Redband Parrotfish	3	8	17	16
154	Redtail Parrotfish				
33	Reef Butterflyfish				
6	Rock Beauty				
461	Round Scad				
196	Schoolmaster	2	24	30	27
26	Scrawled Cowfish				
70	Scrawled Filefish				
21	Seaweed Blenny				
52	Sergeant Major	2	12	14	13
167	Sharpnose Puffer	1	6	6	6
218	Slippery Dick				
27	smooth Trunkfish				
131	Spanish Hogfish	1	9	9	9
34	Spotfin Butterflyfish				
132	Spotfin Hogfish				
59	Spotted Drum				
76	Spotted Goatfish				
66	Spotted Moray				
178	Spotted Scorpionfish				
155	Stoplight Parrotfish				
115	Striped Grunt				
156	Striped Parrotfish	5	6	11	9
45	Sunshinefish	1	3	3	3
185	Tobaccofish				
239	Trumpetfish	1	29	29	29
117	White Grunt	1	21	21	21
141	Yellow Jack				
219	Yellowcheek Wrasse				
228	Yellowhead jawfish				
220	Yellowhead Wrasse	6	6	12	8
54	yellowtail Damsel				
153	Yellowtail (Redfin) Parrotfish				
197	Yellowtail Snapper	6	21	26	24
	# Species	29			
	# Fish	295			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	1	25	25	25
48	Bicolor Damselfish	13	2	5	4
91	Black Grouper				
42	Blue Chromis				
204	Blue Tang				
213	Bluehead	12	7	10	7
105	Bluestriped Grunt				
23	Boga	15	20	2	20
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish				
93	Coney				
215	Creole Wrasse				
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish				
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby	2	15	20	17
7	Great Barracuda	2	100	100	100
63	Green Moray				
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile				
181	Harlequin Bass				
56	Highaht				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby				
148	Midnight Parrotfish				
84	Neon Goby				
206	Ocean Surgeonfish				
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish				
149	Princess Parrotfish				
44	Purple Reeffish	25	1	4	3

5	Queen Angel			
150	Queen Parrotfish			
151	Rainbow Parrotfish			
99	Red Hind			
152	Redband Parrotfish	1	15	15
154	Redtail Parrotfish			
33	Reef Butterflyfish	2	12	12
6	Rock Beauty			
461	Round Scad			
196	Schoolmaster			
26	Scrawled Cowfish			
70	Scrawled Filefish			
21	Seaweed Blenny			
52	Sergeant Major			
167	Sharpnose Puffer	8	3	8
218	Slippery Dick			
27	smooth Trunkfish			
131	Spanish Hogfish	2	7	15
34	Spotfin Butterflyfish			
132	Spotfin Hogfish	2	5	20
59	Spotted Drum			
76	Spotted Goatfish			
66	Spotted Moray			
178	Spotted Scorpionfish			
155	Stoplight Parrotfish			
115	Striped Grunt			
156	Striped Parrotfish	4	18	18
45	Sunshinefish			
185	Tobaccofish			
239	Trumpetfish			
117	White Grunt			
141	Yellow Jack			
219	Yellowcheek Wrasse			
228	Yellowhead jawfish			
220	Yellowhead Wrasse			
54	yellowtail Damsel			
153	Yellowtail (Redfin) Parrotfish			
197	Yellowtail Snapper			
	# Species	13		
	# Fish	89		

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish				
133	Bar Jack	3	5	7	7
48	Bicolor Damselfish	44	3	5	4
91	Black Grouper				
42	Blue Chromis	2	5	5	5
204	Blue Tang				
213	Bluehead	24	5	8	7
105	Bluestriped Grunt				
23	Boga				
79	Bridled Goby				
43	Brown Chromis				
121	Butter Hamlet				
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish	1	8	8	8
93	Coney				
215	Creole Wrasse				
180	Creole-fish				
135	Crevalle Jack				
205	Doctorfish				
31	Foureye Butterflyfish	2	11	11	11
3	French Angelfish				
108	French Grunt				
81	Goldspot Goby				
4	Gray Angelfish				
192	Gray Snapper				
95	Graysby	1	20	20	20
7	Great Barracuda	2	125	125	125
63	Green Moray	1	200	200	200
147	Greenblotch Parrotfish				
843	Hamlet - Juvenile	1	7	7	7
181	Harlequin Bass	1	8	8	8
56	Highaht				
130	Hogfish				
82	Hovering Dartfish				
201	Longspine Squirrel				
457	Mackerel Scad				
83	Masked Goby/Glass Goby	200	2	4	3
148	Midnight Parrotfish				
84	Neon Goby	2	5	5	5
206	Ocean Surgeonfish	1	15	15	15
69	Orangespotted File				
86	Pallid Goby				
111	Porkfish	1	22	22	22
149	Princess Parrotfish				
44	Purple Reeffish	16	0.5	3	2.5

5	Queen Angel			
150	Queen Parrotfish			
151	Rainbow Parrotfish			
99	Red Hind			
152	Redband Parrotfish	1	15	15
154	Redtail Parrotfish			
33	Reef Butterflyfish			
6	Rock Beauty			
461	Round Scad	400	15	20
196	Schoolmaster			18
26	Scrawled Cowfish			
70	Scrawled Filefish			
21	Seaweed Blenny			
52	Sergeant Major			
167	Sharpnose Puffer	3	5	7
218	Slippery Dick			6
27	smooth Trunkfish			
131	Spanish Hogfish			
34	Spotfin Butterflyfish	2	12	12
132	Spotfin Hogfish			12
59	Spotted Drum			
76	Spotted Goatfish			
66	Spotted Moray			
178	Spotted Scorpionfish			
155	Stoplight Parrotfish			
115	Striped Grunt			
156	Striped Parrotfish	1	18	18
45	Sunshinefish	2	4	4
185	Tobaccofish			
239	Trumpetfish			
117	White Grunt	1	30	30
141	Yellow Jack			30
219	Yellowcheek Wrasse			
228	Yellowhead jawfish			
220	Yellowhead Wrasse	2	10	10
54	yellowtail Damsel			10
153	Yellowtail (Redfin) Parrotfish	1	20	20
197	Yellowtail Snapper	7	25	35
				30
	# Species	26		
	# Fish	722		

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish	1	8.0	8.0	8.0
133	Bar Jack	145	19.1	24.8	21.6
48	Bicolor Damselfish	470	3.3	5.9	4.8
91	Black Grouper	1	80.0	80.0	80.0
42	Blue Chromis	41	6.2	7.3	6.3
204	Blue Tang	24	17.8	19.9	18.8
213	Bluehead	507	4.4	10.0	6.7
105	Bluestriped Grunt	51	18.3	26.7	23.3
23	Boga	15	20.0	2.0	20.0
79	Bridled Goby	19	3.3	5.0	4.7
43	Brown Chromis	34	8.3	9.3	8.5
121	Butter Hamlet	9	9.4	10.1	9.8
142	Cero	0	#DIV/0!	#DIV/0!	#DIV/0!
214	Clown Wrasse	0	#DIV/0!	#DIV/0!	#DIV/0!
49	Cocoa Damselfish	2	8.5	8.5	8.5
93	Coney	1	20.0	20.0	20.0
215	Creole Wrasse	173	10.1	14.9	11.9
180	Creole-fish	66	13.9	18.4	17.0
135	Crevalle Jack	0	#DIV/0!	#DIV/0!	#DIV/0!
205	Doctorfish	3	17.3	17.3	17.3
31	Foureye Butterflyfish	13	9.0	9.5	9.3
3	French Angelfish	1	35.0	35.0	35.0
108	French Grunt	63	13.3	19.3	17.0
81	Goldspot Goby	3	5.0	7.0	6.0
4	Gray Angelfish	2	30.5	30.5	30.5
192	Gray Snapper	4	28.8	28.8	28.8
95	Graysby	15	16.6	19.1	17.8
7	Great Barracuda	17	87.7	90.5	89.1
63	Green Moray	2	175.0	175.0	175.0
147	Greenblotch Parrotfish	11	5.6	7.0	6.2
843	Hamlet - Juvenile	1	7.0	7.0	7.0
181	Harlequin Bass	4	7.7	7.7	7.7
56	Highhat	0	#DIV/0!	#DIV/0!	#DIV/0!
130	Hogfish	0	#DIV/0!	#DIV/0!	#DIV/0!
82	Hovering Dartfish	1	6.0	6.0	6.0
201	Longspine Squirrelfish	0	#DIV/0!	#DIV/0!	#DIV/0!
457	Mackerel scad	0	#DIV/0!	#DIV/0!	#DIV/0!
	Masked Goby/Glass				
83	Goby	1662	1.9	3.8	2.7
148	Midnight Parrotfish	1	50.0	50.0	50.0
84	Neon Goby	8	3.7	4.0	4.0
206	Ocean Surgeonfish	21	15.9	17.4	16.3
69	Orangespotted File	1	14.0	14.0	14.0
86	Pallid Goby	2	4.0	4.0	4.0
111	Porkfish	57	22.9	25.7	24.5
149	Princess Parrotfish	13	14.2	20.7	15.9

44	Purple Reeffish	196	1.8	4.4	3.1
5	Queen Angelfish	6	24.0	24.4	24.2
150	Queen Parrotfish	1	25.0	25.0	25.0
151	Rainbow Parrotfish	5	61.3	63.8	66.7
99	Red Hind	0	#DIV/0!	#DIV/0!	#DIV/0!
152	Redband Parrotfish	47	11.5	18.5	15.1
154	Redtail Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!
33	Reef Butterflyfish	10	12.0	12.2	12.1
6	Rock Beauty	7	11.5	13.5	12.8
461	Round Scad	400	15.0	20.0	18.0
196	Schoolmaster	8	22.0	25.0	23.7
26	Scrawled Cowfish	1	24.0	24.0	24.0
70	Scrawled Filefish	3	46.0	48.5	47.5
21	Seaweed Blenny	0	#DIV/0!	#DIV/0!	#DIV/0!
52	Sergeant Major	116	12.0	13.4	12.5
167	Sharpnose Puffer	83	4.2	6.7	5.4
218	Slippery Dick	1	7.0	7.0	7.0
27	Smooth Trunk	1	18.0	18.0	18.0
131	Spanish Hogfish	14	10.8	17.3	12.3
34	Spotfin Butterflyfish	7	13.5	14.0	13.8
132	Spotfin Hogfish	11	12.4	14.4	13.4
59	Spotted Drum	0	#DIV/0!	#DIV/0!	#DIV/0!
76	Spotted Goatfish	1	21.0	21.0	21.0
66	Spotted Moray	1	60.0	60.0	60.0
178	Spotted Scorpionfish	1	20.0	20.0	20.0
155	Stoplight Parrotfish	1	30.0	30.0	30.0
115	Striped Grunt	129	15.5	18.7	17.0
156	Striped Parrotfish	40	11.2	16.5	12.9
45	Sunshinefish	76	4.0	4.8	4.6
185	Tobaccofish	1	8.0	8.0	8.0
239	Trumpetfish	4	23.0	23.0	23.0
117	White Grunt	3	24.7	24.7	24.7
141	Yellow Jack	0	#DIV/0!	#DIV/0!	#DIV/0!
219	Yellowcheek Wrasse	1	10.0	10.0	10.0
228	Yellowhead Jawfish	3	9.0	9.0	9.0
220	Yellowhead Wrasse	40	9.5	12.2	10.7
54	Yellowtail Damselfish	1	8.0	8.0	8.0
	Yellowtail (Redfin)				
153	Parrotfish	1	20.0	20.0	20.0
197	Yellowtail Snapper	420	20.1	26.8	22.7
	# Species	72			
	# Fish	5104			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish	0	#DIV/0!	#DIV/0!	#DIV/0!
133	Bar Jack	131	18.4	26.8	21.5
48	Bicolor Damselfish	143	3.6	6.3	5.1
91	Black Grouper	0	#DIV/0!	#DIV/0!	#DIV/0!
42	Blue Chromis	0	#DIV/0!	#DIV/0!	#DIV/0!
204	Blue Tang	16	16.0	18.6	17.3
213	Bluehead	354	4.6	10.0	6.9
105	Bluestriped Grunt	0	#DIV/0!	#DIV/0!	#DIV/0!
23	Boga	15	20.0	2.0	20.0
79	Bridled Goby	0	#DIV/0!	#DIV/0!	#DIV/0!
43	Brown Chromis	33	7.3	8.7	7.7
121	Butter Hamlet	0	#DIV/0!	#DIV/0!	#DIV/0!
142	Cero	0	#DIV/0!	#DIV/0!	#DIV/0!
214	Clown Wrasse	0	#DIV/0!	#DIV/0!	#DIV/0!
49	Cocoa Damselfish	0	#DIV/0!	#DIV/0!	#DIV/0!
93	Coney	1	20.0	20.0	20.0
215	Creole Wrasse	126	5.0	12.3	7.5
180	Creole-fish	66	13.9	18.4	17.0
135	Crevalle Jack	0	#DIV/0!	#DIV/0!	#DIV/0!
205	Doctorfish	2	19.5	19.5	19.5
31	Foureye Butterflyfish	0	#DIV/0!	#DIV/0!	#DIV/0!
3	French Angelfish	0	#DIV/0!	#DIV/0!	#DIV/0!
108	French Grunt	0	#DIV/0!	#DIV/0!	#DIV/0!
81	Goldspot Goby	0	#DIV/0!	#DIV/0!	#DIV/0!
4	Gray Angelfish	2	30.5	30.5	30.5
192	Gray Snapper	4	28.8	28.8	28.8
95	Graysby	6	18.5	21.8	20.0
7	Great Barracuda	10	85.0	89.4	87.2
63	Green Moray	0	#DIV/0!	#DIV/0!	#DIV/0!
147	Greenblotch Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!
843	Hamlet - Juvenile	0	#DIV/0!	#DIV/0!	#DIV/0!
181	Harlequin Bass	0	#DIV/0!	#DIV/0!	#DIV/0!
56	Highhat	0	#DIV/0!	#DIV/0!	#DIV/0!
130	Hogfish	0	#DIV/0!	#DIV/0!	#DIV/0!
82	Hovering Dartfish	0	#DIV/0!	#DIV/0!	#DIV/0!
201	Longspine Squirrelfish	0	#DIV/0!	#DIV/0!	#DIV/0!
457	Mackerel scad	0	#DIV/0!	#DIV/0!	#DIV/0!
	Masked Goby/Glass				
83	Goby	29	2.5	4.0	3.0
148	Midnight Parrotfish	1	50.0	50.0	50.0
84	Neon Goby	0	#DIV/0!	#DIV/0!	#DIV/0!
206	Ocean Surgeonfish	0	#DIV/0!	#DIV/0!	#DIV/0!
69	Orangespotted File	1	14.0	14.0	14.0
86	Pallid goby	0	#DIV/0!	#DIV/0!	#DIV/0!
111	Porkfish	3	22.7	22.7	22.7
149	Princess Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!

44	Purple Reeffish	141	1.9	5.1	3.5
5	Queen Angelfish	3	20.5	21.5	21.0
150	Queen Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!
151	Rainbow Parrotfish	5	61.3	63.8	66.7
99	Red Hind	0	#DIV/0!	#DIV/0!	#DIV/0!
152	Redband Parrotfish	21	13.6	17.9	15.6
154	Redtail Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!
33	Reef Butterflyfish	7	11.5	11.5	11.5
6	Rock Beauty	6	9.7	12.3	11.3
461	Round Scad	0	#DIV/0!	#DIV/0!	#DIV/0!
196	Schoolmaster	0	#DIV/0!	#DIV/0!	#DIV/0!
26	Scrawled Cowfish	0	#DIV/0!	#DIV/0!	#DIV/0!
70	Scrawled Filefish	1	47.0	47.0	47.0
21	Seaweed Blenny	0	#DIV/0!	#DIV/0!	#DIV/0!
52	Sergeant Major	3	15.0	15.0	15.0
167	Sharpnose Puffer	64	3.8	7.3	5.7
218	Slippery Dick	0	#DIV/0!	#DIV/0!	#DIV/0!
27	Smooth Trunk	0	#DIV/0!	#DIV/0!	#DIV/0!
131	Spanish Hogfish	12	9.8	18.5	11.8
34	Spotfin Butterflyfish	4	12.5	13.5	13.0
132	Spotfin Hogfish	11	12.4	14.4	13.4
59	Spotted Drum	0	#DIV/0!	#DIV/0!	#DIV/0!
76	Spotted Goatfish	0	#DIV/0!	#DIV/0!	#DIV/0!
66	Spotted Moray	1	60.0	60.0	60.0
178	Spotted Scorpionfish	1	20.0	20.0	20.0
155	Stoplight Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!
115	Striped Grunt	129	15.5	18.7	17.0
156	Striped Parrotfish	16	13.0	19.5	15.1
45	Sunshinefish	65	4.2	6.5	5.3
185	Tobaccofish	0	#DIV/0!	#DIV/0!	#DIV/0!
239	Trumpetfish	2	25.0	25.0	25.0
117	White Grunt	0	#DIV/0!	#DIV/0!	#DIV/0!
141	Yellow Jack	0	#DIV/0!	#DIV/0!	#DIV/0!
219	Yellowcheek Wrasse	0	#DIV/0!	#DIV/0!	#DIV/0!
228	Yellowhead Jawfish	0	#DIV/0!	#DIV/0!	#DIV/0!
220	Yellowhead Wrasse	7	14.4	14.8	14.6
54	Yellowtail Damselfish	0	#DIV/0!	#DIV/0!	#DIV/0!
	Yellowtail (Redfin)	0	#DIV/0!	#DIV/0!	#DIV/0!
153	Parrotfish	75	20.4	26.7	22.9
	# Species	38			
	# Fish	1517			

Sp #	Name	#	Min	Max	Mean
30	Banded Butterflyfish	1	8.0	8.0	8.0
133	Bar Jack	14	19.9	22.6	21.6
48	Bicolor Damselfish	327	3.1	5.6	4.4
91	Black Grouper	1	80.0	80.0	80.0
42	Blue Chromis	41	6.2	7.3	6.3
204	Blue Tang	8	19.8	21.5	20.6
213	Bluehead	153	4.3	10.0	6.6
105	Bluestriped Grunt	51	18.3	26.7	23.3
23	Boga	0	#DIV/0!	#DIV/0!	#DIV/0!
79	Bridled Goby	19	3.3	5.0	4.7
43	Brown Chromis	1	11.0	11.0	11.0
121	Butter Hamlet	9	9.4	10.1	9.8
142	Cero	0	#DIV/0!	#DIV/0!	#DIV/0!
214	Clown Wrasse	0	#DIV/0!	#DIV/0!	#DIV/0!
49	Cocoa Damselfish	2	8.5	8.5	8.5
93	Coney	0	#DIV/0!	#DIV/0!	#DIV/0!
215	Creole Wrasse	47	14.2	17.0	15.4
180	Creole-fish	0	#DIV/0!	#DIV/0!	#DIV/0!
135	Crevalle Jack	0	#DIV/0!	#DIV/0!	#DIV/0!
205	Doctorfish	1	13.0	13.0	13.0
31	Foureye Butterflyfish	13	9.0	9.5	9.3
3	French Angelfish	1	35.0	35.0	35.0
108	French Grunt	63	13.3	19.3	17.0
81	Goldspot Goby	3	5.0	7.0	6.0
4	Gray Angelfish	0	#DIV/0!	#DIV/0!	#DIV/0!
192	Gray Snapper	0	#DIV/0!	#DIV/0!	#DIV/0!
95	Graysby	9	15.3	17.3	16.3
7	Great Barracuda	7	92.5	92.5	92.5
63	Green Moray	2	175.0	175.0	175.0
147	Greenblotch Parrotfish	11	5.6	7.0	6.2
843	Hamlet - Juvenile	1	7.0	7.0	7.0
181	Harlequin Bass	4	7.7	7.7	7.7
56	Highhat	0	#DIV/0!	#DIV/0!	#DIV/0!
130	Hogfish	0	#DIV/0!	#DIV/0!	#DIV/0!
82	Hovering Dartfish	1	6.0	6.0	6.0
201	Longspine Squirrelfish	0	#DIV/0!	#DIV/0!	#DIV/0!
457	Mackerel scad	0	#DIV/0!	#DIV/0!	#DIV/0!
	Masked Goby/Glass				
83	Goby	1633	1.8	3.8	2.6
148	Midnight Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!
84	Neon Goby	8	3.7	4.0	4.0
206	Ocean Surgeonfish	21	15.9	17.4	16.3
69	Orangespotted File	0	#DIV/0!	#DIV/0!	#DIV/0!
86	Pallid Goby	2	4.0	4.0	4.0
111	Porkfish	54	23.0	27.2	25.4
149	Princess Parrotfish	13	14.2	20.7	15.9

44	Purple Reeffish	55	1.6	3.0	2.4
5	Queen Angelfish	3	26.3	26.3	26.3
150	Queen Parrotfish	1	25.0	25.0	25.0
151	Rainbow Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!
99	Red Hind	0	#DIV/0!	#DIV/0!	#DIV/0!
152	Redband Parrotfish	26	9.4	19.1	14.6
154	Redtail Parrotfish	0	#DIV/0!	#DIV/0!	#DIV/0!
33	Reef Butterflyfish	3	13.0	13.5	13.3
6	Rock Beauty	1	17.0	17.0	17.0
461	Round Scad	400	15.0	20.0	18.0
196	Schoolmaster	8	22.0	25.0	23.7
26	Scrawled Cowfish	1	24.0	24.0	24.0
70	Scrawled Filefish	2	45.0	50.0	48.0
21	Seaweed Blenny	0	#DIV/0!	#DIV/0!	#DIV/0!
52	Sergeant Major	113	11.0	12.8	11.7
167	Sharpnose Puffer	19	4.7	6.1	5.1
218	Slippery Dick	1	7.0	7.0	7.0
27	Smooth Trunk	1	18.0	18.0	18.0
131	Spanish Hogfish	2	13.5	13.5	13.5
34	Spotfin Butterflyfish	3	14.5	14.5	14.5
132	Spotfin Hogfish	0	#DIV/0!	#DIV/0!	#DIV/0!
59	Spotted Drum	0	#DIV/0!	#DIV/0!	#DIV/0!
76	Spotted Goatfish	1	21.0	21.0	21.0
66	Spotted Moray	0	#DIV/0!	#DIV/0!	#DIV/0!
178	Spotted Scorpionfish	0	#DIV/0!	#DIV/0!	#DIV/0!
155	Stoplight Parrotfish	1	30.0	30.0	30.0
115	Striped Grunt	0	#DIV/0!	#DIV/0!	#DIV/0!
156	Striped Parrotfish	24	10.1	14.9	11.6
45	Sunshinefish	11	3.8	2.8	3.9
185	Tobaccofish	1	8.0	8.0	8.0
239	Trumpetfish	2	21.0	21.0	21.0
117	White Grunt	3	24.7	24.7	24.7
141	Yellow Jack	0	#DIV/0!	#DIV/0!	#DIV/0!
219	Yellowcheek Wrasse	1	10.0	10.0	10.0
228	Yellowhead Jawfish	3	9.0	9.0	9.0
220	Yellowhead Wrasse	33	6.8	10.8	8.6
54	Yellowtail Damselfish	1	8.0	8.0	8.0
	Yellowtail (Redfin)				
153	Parrotfish	1	20.0	20.0	20.0
197	Yellowtail Snapper	345	19.8	26.9	22.6
	# Species	60			
	# Fish	3587			

Sp #	Name	Vandenberg	V mean size	Joes Tug	JT mean size
30	Banded Butterflyfish			1	8.0
133	Bar Jack	131	21.5	14	21.6
48	Bicolor Damselfish	143	5.1	327	4.4
91	Black Grouper			1	80.0
42	Blue Chromis			41	6.3
204	Blue Tang	16	17.3	8	20.6
213	Bluehead	354	6.9	153	6.6
105	Bluestriped Grunt			51	23.3
23	Boga	15	20.0		
79	Bridled Goby			19	4.7
43	Brown Chromis	33	7.7	1	11.0
121	Butter Hamlet			9	9.8
142	Cero				
214	Clown Wrasse				
49	Cocoa Damselfish			2	8.5
93	Coney	1	20.0		
215	Creole Wrasse	126	7.5	47	15.4
180	Creole-fish	66	17.0		
135	Crevalle Jack				
205	Doctorfish	2	19.5	1	13.0
31	Foureye Butterflyfish			13	9.3
3	French Angelfish			1	35.0
108	French Grunt			63	17.0
81	Goldspot Goby			3	6.0
4	Gray Angelfish	2	30.5		
192	Gray Snapper	4	28.8		
95	Graysby	6	20.0	9	16.3
7	Great Barracuda	10	87.2	7	92.5
63	Green Moray			2	175.0
147	Greenblotch Parrotfish			11	6.2
843	Hamlet - Juvenile			1	7.0
181	Harlequin Bass			4	7.7
56	Highhat				
130	Hogfish				
82	Hovering Dartfish			1	6.0
201	Longspine Squirrelfish				
457	Mackerel scad				
83	Masked Goby/Glass Goby	29	3.0	1633	2.6
148	Midnight Parrotfish	1	50.0		
84	Neon Goby			8	4.0
206	Ocean Surgeonfish			21	16.3
69	Orangespotted File	1	14.0		
86	Pallid Goby			2	4.0
111	Porkfish	3	22.7	54	25.4
149	Princess Parrotfish			13	15.9
44	Purple Reeffish	141	3.5	55	2.4

